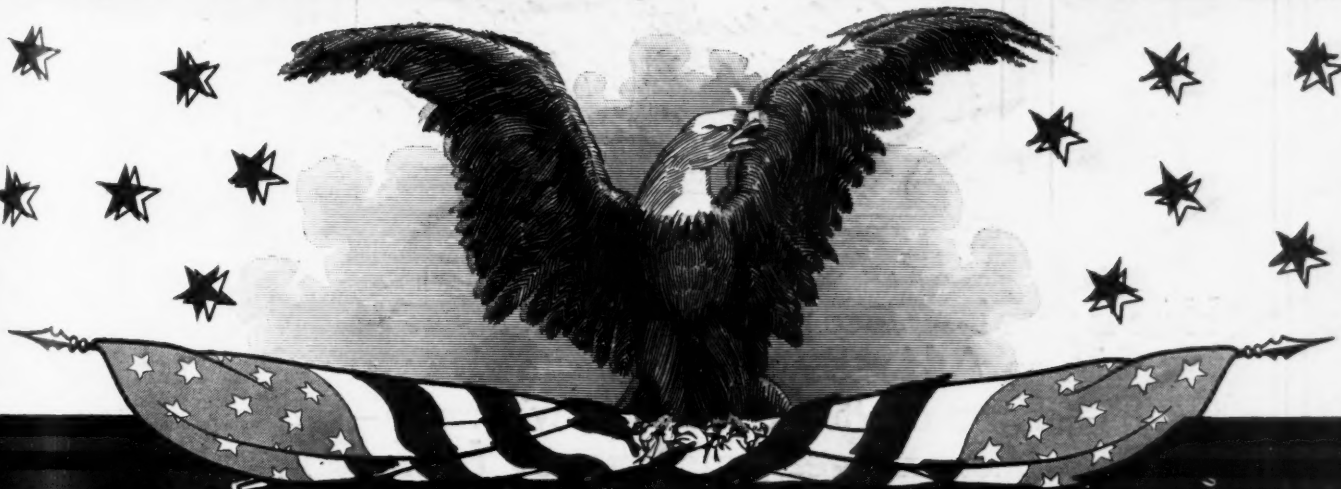


DECEMBER 1915

AMERICAN CARPENTER AND BUILDER



THE WORLD'S GREATEST BUILDING PAPER

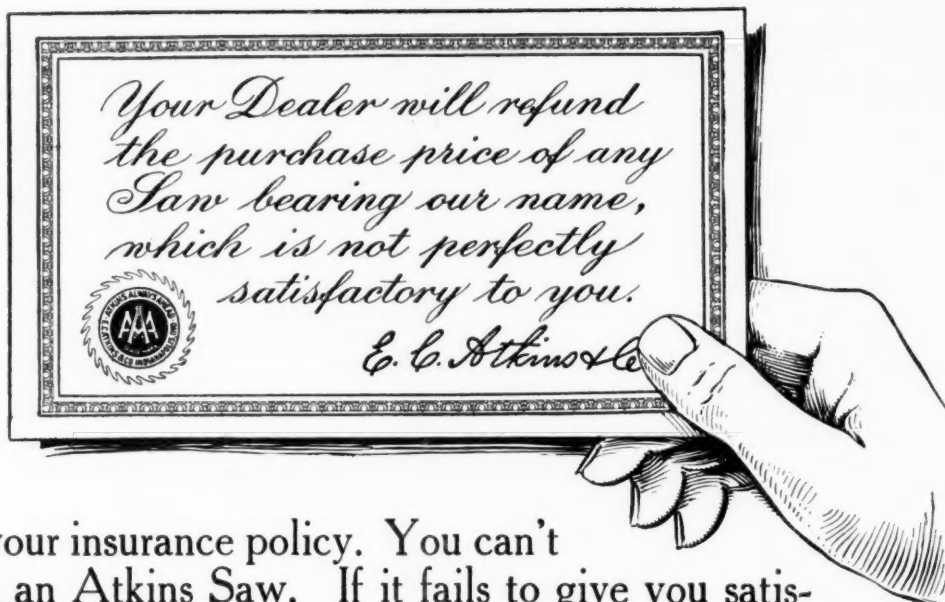
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Advance Showing of 1916
Styles and Models in Building
Materials and Supplies, and
Contractors Equipment

Price 20 Cents

Buy a Saw that is Guaranteed



Here is your insurance policy. You can't lose with an Atkins Saw. If it fails to give you satisfaction—if you don't get your money's worth—take it back to your dealer and **get your money back**. That's fair, isn't it? Well, it's the way we do business.

Atkins *Silver Steel* Saws

Made of steel as fine as razor steel. Tempered in special gas ovens. No hard or soft spots. It's **saw** clean through, and the kind of a saw that you, as a lover of fine tools, should use.

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Our name on the blade insures the genuine.
Made under no other brand than ATKINS.*

Our Free Offer Send ten cents for postage and get a Free Nail Apron, a Saw Sense Book for Carpenters, a Monthly Time Book, and maybe there will be something besides in the packet for you.

E. C. ATKINS & CO. Inc.
INDIANAPOLIS :: :: INDIANA



The Season's Greeting

IT seems especially fitting to be writing a Christmas Greeting to our Readers today; for tomorrow is Thanksgiving; and certainly this year we all have much to be thankful for. Holiday greetings sent and received by thankful hearts certainly are the best.

So to you and yours we wish the very best that Christmas and New Year can bring—Health, Hope and a Friend, the disposition to work hard, to play fair and to help the Other Fellow.



WE have truly appreciated the loyalty and interest so many of our readers have shown this publication during this year. We want to take this occasion to publicly thank them. Your encouragement and your suggestions have helped us to set a new high record this year among building journals. Our own

best previous records have been far surpassed this year, and the field has been completely distanced and left behind.

Thanks to the support of our 40,000 subscribers (the responsible builders in 13,500 progressive cities and towns), the AMERICAN CARPENTER AND BUILDER has fully justified its slogan of "World's Greatest Building Paper." Four facts prove this:

FIRST—Its Net Paid Circulation is greater than any two other building papers combined.

SECOND—Its price for advertising is less per thousand of paid circulation than any other building paper.

THIRD—It carries more advertising by over 60% than any other building paper.

FOURTH—It receives more advertising from responsible advertis-

ing agencies than all other building papers.

These are points of interest to our readers as well as to advertisers; since they assure the largest and most interesting buyers' guide when builders are in the market for supplies, and also they guarantee the continuance of those special costly editorial features which otherwise could not be afforded.



FOR all of which we are duly thankful—and encouraged to undertake for the year 1916 a still more ambitious program of special features, articles, details and illustrations, which we believe will be extra valuable to our readers.



MERRY Christmas and Happy New Year.

EDITOR, AMERICAN CARPENTER AND BUILDER.

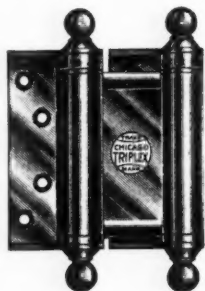
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SPRING HINGES A SUGGESTION

Do you specify a spring hinge with distinctive features which will appeal to your client and assure satisfaction to all concerned?



Chicago "Triplex" Spring Butts

offer this advantage to you. The appearance, durability and finish of this article are unsurpassed, and in consideration of prices that are conservative in respect to value, the up-to-date builder cannot afford to risk his reputation for goods that are unsatisfactory.

Send for Catalogue C 32. It illustrates and describes the most complete line of Spring Hinges manufactured.

Chicago Spring Butt Company.

CHICAGO

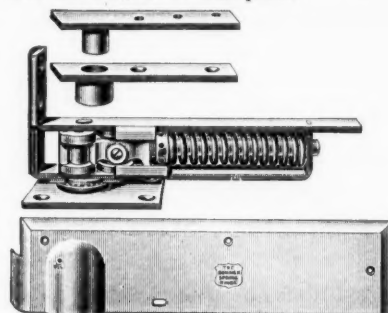


NEW YORK

BOMMER

Floor Surface Spring Hinge For Double-Acting and Single-Acting Doors Release and Holdback Ball Bearing Alignment Device

Every moving part of this hinge can be oiled from a single hole on outside of side-plate.



The most durable hinge of its type; holds the door open when swung to 90 degrees at either side. The spring-action can also be entirely released as long as desired so that the door will swing free, without spring-action, in either direction, by inserting a wire nail (when the door is open) into a hole provided in the side plates for that purpose. The spring-action can be restored by withdrawing the nail.

Your Hardware Merchant Can Supply Them
Bommer Bros., Manufacturers Brooklyn, N.Y.



A Bungalow for Permanent Occupancy. Charles E. Anderson, designer, White Plains, N. Y. "The roof is covered with shingles dipped 10" in Cabot's Creosote Shingle Stains; the body is stained a rich brown with Cabot's Creosote Stain."

You Can Pick Out the houses that have been stained with Cabot's Creosote Shingle Stains

The colors are so soft and rich and lasting that all other stains look cheap and tawdry in comparison. They go farther, last longer, preserve the wood better and are vastly more artistic—and every gallon is guaranteed. Imitation stains smell of kerosene or benzine and are dangerously inflammable. Cabot's Stains are the genuine Creosote, wood-preserving stains, and they make the wood less inflammable.

CABOT'S QUILT

A scientific heat insulator and sound-deadener that makes houses warmer in winter and cooler in summer and deadens sound in floors and partitions. Not a mere felt or paper, but non-conducting mat that is about thirty times warmer than common papers.

You can get Cabot's Stains and Quilt all over the country. Send for samples and names of nearest agents.

SAMUEL CABOT, Inc., Mfg. Chemists

BOSTON, MASS. 24 W. Kinzie St., Chicago
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Your success depends upon the permanence of your work. You can bank your reputation on the lasting qualities of work done over

Kno-Burn

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Expanded Metal Lath

Better let us give you details about the mesh of "Kno-Burn" and why it is the "certain" lath for plaster, stucco or over-coating work. Ask for booklet 33.

North Western Expanded Metal Co.

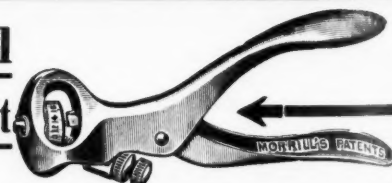
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Chicago, Ill.

Worth Much to You

Morrill

Saw Set



All master carpenters are using this Saw Set. In one operation it takes out the wrong set and puts in the right one. Write for FREE booklet "Saw Points". It tells how to properly joint, set and file hand saws.

CHAS. MORRILL

94 Lafayette Street
NEW YORK

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Circulation Audited and Verified February, 24, 1915

The
**World's Greatest
Building Paper**

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When your subscription expires, renew at once, using the blank enclosed in your final copy. If it expires with this issue your renewal must reach us before December 25, to avoid missing the January number. Use P. O. or Express Money Order, if possible, but bills or 2-cent stamps may be sent at our risk.

The
**World's Greatest
Building Paper**

American Carpenter and Builder

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PROTECTION FOR OUR READERS

The publishers of the American Carpenter and Builder will not knowingly accept advertising from any individual, firm or corporation that is misleading in any way. They also reserve the right to edit advertising copy and to change or eliminate any statements that reflect or cast discredit upon any other building products.

The American Carpenter and Builder Company will use every legitimate means to safeguard the interests of its readers and its advertisers. It will use every effort to protect them from concerns whose business methods are open to question. Where the slightest doubt exists write the publishers for complete information. It may save money, time and worry.

In all cases in writing to advertisers inquirers should say: "I saw your advertisement in the American Carpenter and Builder."

VOL. XX

DECEMBER, 1915.

No. 3

Information Worth \$1,000.00 Free

GOLDEN OPPORTUNITIES TO BE HAD FOR THE ASKING
"I MADE one thousand dollars extra on that school house contract by using a new style material hoist which I saw announced in a small ad. in the AMERICAN CARPENTER AND BUILDER."

We were interested at once and asked for particulars.

"Yes, and that's only one of the many good things I get next to, by studying carefully your advertising pages each month," our contractor friend from down-the-state continued. "I read them all, large ads. and small ads.—and write for catalogs, booklets, and samples whenever I run onto anything new or interesting.

"My partner says I have the ad-answering habit, and I guess I have; but he doesn't complain, as it has put us in line for many a fine contract that we never would have landed except for my up-to-date reference file of building trade booklets and catalogs covering the entire field.

"These winter months especially are the best time we busy builders have to investigate and post up on new things or on those items we will need this coming year that require special investigating.

"See you have been having a lot of suggestions about how to employ the winter months to the best advantage. Here's my suggestion:

"Get thoroughly acquainted NOW with all the building materials that are now on the market (there are a raft of them

and you'll be surprised to find out about some of them); also get just as well posted on all the fixtures, finish and special equipment required for completing a modern building as you are on the structural materials. (Remember that the owner looks to you as his expert adviser even where you don't prepare the plans and specifications yourself; and it makes a big hit with him to find that you are thoroly posted and qualified to advise him.)

"The easiest way to get and keep familiar with all of the supply side of the building business is to watch the advertising pages of the AMERICAN CARPENTER AND BUILDER. You get by far the biggest list there to choose from; and practically all of the worth while propositions are featured there each month.


"Then when it comes to mechanics' tools and building contractors' equipment, there again I find we owe it to ourselves to study the advertising pages closely. New ideas are being worked up all the time, perfected and placed on the market; and why should I close my eyes to them when they might be making me money and when I can find out all about them by merely spending a postage stamp!"

These words from our contractor friend we believe to be excellent advice for others. Let us make full use of these READING MONTHS by writing advertisers for their literature and thoroly investigating the new things and the things we will need to know all about this coming building season.

Editor AMERICAN CARPENTER AND BUILDER.

MORE WINTER WORK

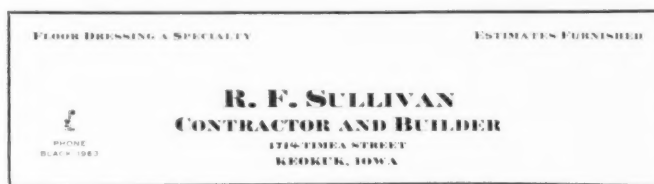


Practical suggestions
for
keeping the 
coming in during
the Winter Months

PRIZE LETTER: *Builds House on Speculation, Arranging to Pay for Lot and Materials when House is Sold*

Keokuk, Iowa.
Winter Work Editor,
"A. C. & B.":

Last winter was a very dull winter and no work, but I had to find something to do, so I went to see a man who had a number of good lots in a good location of the city,



and made a deal with him for a lot; that is, he was to furnish me a lot on which to erect a house, and receive his pay for the lot when I

got the house done, and either sold or got a loan on the property.

Then we went to a lumber dealer, plumber, furnace man, tinner and electrician, and made similar arrangements. When all was ready, I went to work, did the excavating, built my forms, had my foundation poured, and then started to build. Of course, I did not get it finished last winter, but have worked on it only at times when I had nothing else to do, and just today, I sold it at a price so that I can buy a lot and build another house the same way this winter. Then next year I can sell that house and have more for myself.

Now, I don't see why, if that will work here, it won't work in other places.

R. F. SULLIVAN,
Contractor and Builder.



"I Made a Deal with a Man Who Owned Some Good Building Lots."

PRIZE LETTER: *1000 Shop Products That Sell*

Tom Bean, Texas.
Winter Work Editor "A. C. & B.":

Last winter everything seemed dull, on account of too much rain, war, and a few other things. To make a long story short, I had to find a place indoors; and after looking about I found a building 20 by 40 feet, with a saw rig equipped with band saw, rip and cut-off. I rented the building, and borrowed the money to buy the rig, and went to work at once, and have been pretty busy most of the time. Of course, there have been lots of days that I have to find something to do; but I take time by the forelock, and build things that will sell in the proper season.

Here are a few of the things that I have built on this plan: Beehives, bee

frames, kitchen cabinets, medicine cabinets, desks, tables of every description, cedar chests, pine chests, ice chests, panel doors, glass panel doors, screen doors, window screens, hay frames, buck rake teeth, mower and binder tongues, etc.



Don't Be Afraid to Tackle a Small Job—It May Bring You a Big One Later On.

Every now and then someone comes along who wants his house or barn repaired, or a room added, and, of course, that is what I am looking for. If you are at all handy, the world is full of crippled chairs and other kinds of furniture which need repairing. Some fellows would not stoop to these little jobs, because it hurts a fellow's pride a good deal to leave a good job and go chasing after these little two-bit jobs; but this is the way that I have passed my time during the dull season.

I have in a bid on a six-room bungalow, and there is quite a lot of work on it; but it all depends on the man behind the gun as to getting it going.

If you are going to get along with any kind of work, you must have some knowledge of the work in hand, also make it a point to learn all you can about the trade,

because sooner or later you will be called on to show that you really know what you are about. On the other hand, don't be afraid to tackle a small job just because you never did the trick before, for there is nothing like being game to try. Also, do not try to make folks think you know it all, for sometime you will find yourself in a peck of fixes, as the little boy said.

After all, the main thing is, stick to business and keep your eyes open for something better; for it's a long lane that never turns.

Hoping this may help some of the boys who really have to work at something all the time, I am one who has been there.

M. L. TAYLOR,

Carpenter and Woodworker.

PRIZE LETTER: A Plan for Reaching Out Into Wider Territory

HOW ONE BUILDER PROPOSES TO INCREASE AND STEADY HIS BUSINESS BY DISTRIBUTING BUILDING BOOKS IN NEARBY SMALL TOWNS

Winter Work Editor, "A. C. & B.": ——— Iowa.

We are located in a small town of about 400 souls; it's a railway junction, and a busy trading and shipping center of a good farming community.

Our work is chiefly residences, barns, and other outbuildings. We also do considerable concrete work. During some of the summer months we hire as many as twenty men, while through the winter months we most always stop working the gang altogether, and your humble servant gets time to crack nuts for the housewife when she bakes a birthday cake for Willie or one for the Ladies' Aid Social.

We have a small woodworker and gas engine on truck, and it goes wherever we go. We have a continuous cement mixer and a water supply tank that goes with it. We also have a block and tackle; one with 225 feet of $\frac{7}{8}$ -inch rope, and another with $\frac{5}{8}$ -inch rope. With one of these we can raise most any kind of a barn. We also have jack screws and other tools that are indispensable in our business, and most important of all, an outfit of carpenter tools as you seldom see in the backwoods.

Several years ago, I thought I could keep busy thru the winter drawing plans, but I've had the corners knocked off since. First I could draw all plans for all the work we did during our three-year existence in less than a winter's time—and it is more than just a hand full. In 1914 we erected fourteen residences, and in all we worked up about eighteen carloads of lumber during that season alone. Few owners or speculators plan that far ahead. Many act on the impulse of a moment, and want you to have plans and figures ready over night, and in the busiest time of the season. So in winter time we must try to add another sprocket to our wheel so that we can speed up a little faster in the good old summer time.

Well, in the winter we can write to the AMERICAN

CARPENTER AND BUILDER and ask them what to do (we are not all so wise that we can give suggestions), and of course, the AMERICAN CARPENTER AND BUILDER guesses that Sally Myers wants an easy chair and Deacon Elkins' plaster is coming loose and should be covered with wallboard. It is a good thing that they can guess, it gives us ideas, and we all know we are welcome to ask for information.

Pardon a Digression

It gets my goat, tho, when some member asks how to cut the hood rafters for a barn and a definite explanation is given, and then about the fifth or sixth issue after, some other struggling member comes and asks the same question—and worst of all, claims he has no trouble with hip and valley rafters. And the nerve of the fellow who is now working for himself or is the whole cheese, to make public confession that he used to shirk on the job because the boss had a rusty spot on one side of his brains. I believe it is the duty of each and every man that draws wages to do his honest day's work, whether the boss is an angel or not. Contractors and bosses make mistakes, have feelings, catch a cold and have reasons for being a little grouchy sometimes just like other people; but that does not excuse the man working for him to stand around on his hind feet when the boss isn't around.

I have worked for other men in my days, but it never entered my head to shirk my work when the boss did not seem to treat me right! if I had, I would consider myself the greatest loser. I would generally work till quitting time, and then get the boss out on the road and talk the matter over with him; but I am glad to say that I had very little trouble in that line. But let us get back on the track again.

What for Winter Work?

In the winter time when I am cracking nuts our boys do odd jobs; some put up fuel, others make furni-

ture for themselves, while some of the younger men hire out by the month. Of course, once in a while we get a screen job or some furniture to make, but we have plenty of time to listen to the *Howling of the Wolf*. In the springtime when we all get together again to see how many pounds each gained and how many dollars each spent, we all feel like birds out of the cage and glad to get busy.

From a contractor's point of view, I have always striven for the condition where I could turn out my own millwork through the winter—but what good will the millwork do when you have not enough work of such a nature to insure a reasonable profit?

I have finally decided to act upon a plan to bring about these conditions and altho it is yet a theory with me, I will give you an outline with the hope that some one may gain something.

Now for My Plan

We have a morning train thru our town that runs thru about eight similar towns before dinner time after it leaves here. In the evening it is due here at 5:49. This gives us good service to all of these little towns. Upon investigating, we find that very few of these towns have contractors, and not all have a real carpenter gang; and also that a great many of the people are in the habit of getting some relative carpenter from anywhere when the local carpenters cannot handle the work. Because these towns are on a branch railway, the freight rates are somewhat higher on building material than to the towns on the trunk lines; and consequently the local yard does not sell all the building material

Therefore by getting lumber and other building materials by the carload lots—

By drawing up definite plans and specifications—

By cutting all dimension lumber to length—such as sills, joists, studding, rafters, and sizing dressing and selecting O. S. Finish before shipping—

By getting out our own millwork—such as jambs, frames, baseboards, base blocks, angle blocks, window stooling, cap moulding, stair rail, balusters, cabinet work, screens, etc.—

By using a standard for all material, rough or finished—

By using a standard method of construction—

And train each man to specialize—

We should be able to obtain contracts in these towns, give work to some of the local men, and **KEEP OUR BOYS BUSY ALL WINTER.**

To get acquainted is the first important part—to get acquainted and advertise.

A Give-Away Book of House and Barn Ideas Wanted

To make an impression we want some small plan books. We saw some at a local lumber yard; but they were too large, and had too much printed matter for our purpose. We want a small book with about eight

bungalow plans and about as many two-story houses, gambrel roof barns, and a few outbuildings and some concrete silo construction. Then, with some local reference, as to what we have done at home, we should have no trouble in establishing confidence in our company.

Then give us a chance to shake hands with the people and we will get acquainted.

Yours for work the year around.

IOWA.

[Name and address withheld by request.—EDITOR.]

NOTE—This seems to be an excellent idea. Possibly the AMERICAN CARPENTER AND BUILDER could get together just such a book as you have in mind—one that could be distributed among prospective home builders at a reasonable cost. At any rate, we are ready and willing to help in any way we can, and will gladly co-operate with any of our enterprising readers to work this idea out.

What do you other builders, who are situated as this Iowa friend is, think of this proposition?

EDITOR AMERICAN CARPENTER AND BUILDER.



PRIZE LETTER—Money Building Boats During Winter

San Rafael, Cal.

Winter Work Editor "A. C. & B.":

This is to be the experience of a friend, not my own, as he would not write it up himself, but told me all about it so that I could.



"My Friend Turned a Neighboring Barn Into a Boat-Building Shop."

During the summer months he is extremely busy, but not too busy to talk boats to every man he thinks would like to own one—and nearly every man does around this place. He says he has never yet found a man that wanted one *at once*. “After awhile,” “next year,” “when I make a sale,” and such answers.

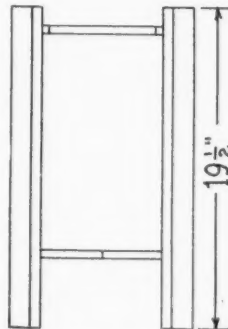
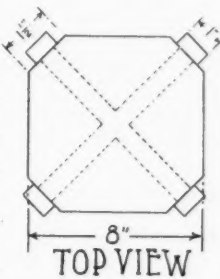
Now that is exactly the kind of customers he is watching for. He simply tells them how reasonably he built Thompson’s, gives the size, fittings, etc. Just a few hints and ideas for him to think about. In about three or four weeks he makes it a point to see the man again, and casually mentions the subject once more. Mentions that he built Soandso’s last winter during the slack period when he had nothing else to do and therefore gave him a special price. About a month later he again talks boat to the prospect. And this time, if he sees any show at all, he gets down to brass.

By playing up big on the winter work idea he makes a decided impression. He gets an idea about what size boat the man leans to, and then gives him an estimate on it. He knows well that most of them will sooner or later enquire of the regular boat builders what it would cost, and as he has their figures all slated, he knows a safe margin. For these boat builders are sure fliers when it comes to prices. Out of four or five possible customers Joe always manages to get one or two boats to build every winter. They are small launches—from 18 to 30 feet long—and he has the use of a big barn on some vacant property near his own home. So he works, rain or shine.

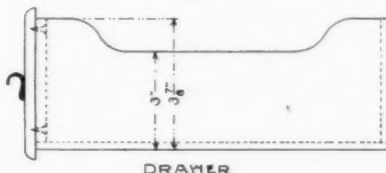
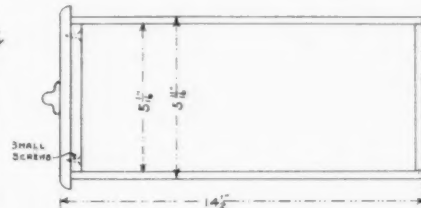
Now Joe does not make any fortune out of this boat building business. But he does make from two to three dollars a day out of it. And I want to know if that is not better than loafing around the house growling at the wife and kidlets. He tells me that last winter he made three dollars a day for every day that he worked in the old barn. Of course there was some good weather and he did whatever jobs he had during that time. But about three months of these California winters you can’t do carpenter work unless you have a roof over you.

But after all, the point I want to bring out was this—it doesn’t have to be *boats*. It may be mission furniture,

or wall board, or weather stripping, or arts and crafts lamps, or any one of forty other things. The idea is TO SEE IT. Don’t wait for the rains to begin and *then* look for a wet weather job. You must be on the watchout for it during the summer. The earlier you can pick it out the better. Once picked on, then you can keep it in view at all times and prepare for it in many ways. Keep tab of the people who are likely to want it—make a list of them. Figure out just exactly what you are



Plant Stand



DRAWER



OUTSIDE CASE

Filing Case Drawer.

going to do and how. Then work on it all your spare time. In that way you will be prepared for it when it comes and can take right hold of it.

H. J. BLACKLIDGE.



Plant Stand, Filing Case and Footstool

Winter Work Editor “A. C. & B.”:

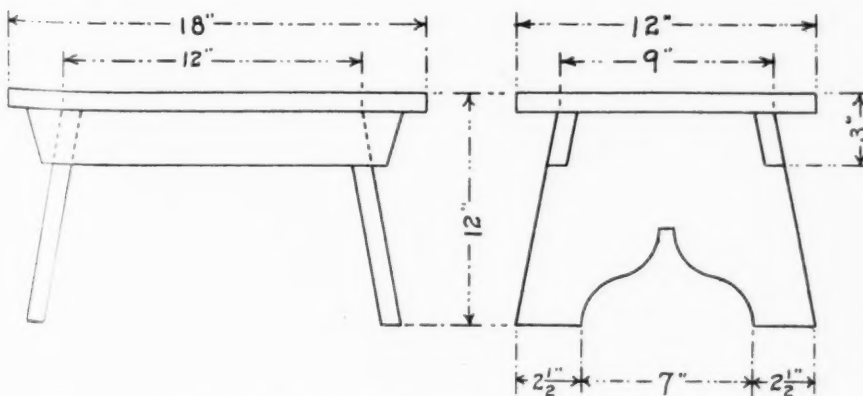
Rome, Ga.

Am sending you sketches of articles I have made, nearly all from scraps. Any carpenter with a woodworker can knock out this class of work at a nice profit. I have tried it, and find it pays.

First, is a small stand for plants, or other uses. Legs are 3/4 by 1 by 19 1/2 inches, cross braces are 1/2 by 3/4 inch.

These are halved together, which can be done with a dado head, or otherwise, and are placed 4 inches up from the bottom of legs. Top is 8 inches square, cut as shown, and placed 1 inch down from the top of legs.

Another illustration is of a filing case, which was made from boxes that had been used for shipping purposes. Of course the wood was in the rough, but after being planed and sanded, left a very pretty grain. It was poplar and holds cards 3 by 5 inches. It is a good article for the contractor’s office and for the housewife to file her cooking recipes in. The drawer was made first, then



Working Drawings of Nicely Proportioned Wooden Foot Stool.

the outside case. Use a sash lift for drawer pull.

Here also is a sketch of a foot-stool. I put three $\frac{3}{4}$ -inch holes in the top about $\frac{1}{2}$ inch apart to enable a person to carry them easily and stained them a dark mahogany and mission.

C. H. FULLER.



Specializes on Concrete Work

Winter Work Editor "A. C. & B.": Petersburg, W. Va.

Enclosed find \$2.00 for my renewal and coupon for your 256-page work, "Guaranteed Building Plans." I notice a great deal about how to keep busy for a few winter months. If I could only find a way to get all I have to do done in these few months before spring work opens up! At this time I have already half of a summer season work contracted for.

My strong point is concrete, but I do a great deal of carpentry. I have this past summer put down over a mile of pavement and I suppose fully a dozen foundations for houses, 6 or 8 cellar floors, some of them large ones, retaining walls by the dozen; besides two reinforced concrete bridges for the country.

I own a Big-an-Little mixer and a lot of Hetzel steel forms for pavements; and am proud of the equipment. Can't beat it, I don't think. Have also built two houses—one brick, \$3,000.00, and a \$2,400.00 frame house. I also do quite a nice little business handling Beaver Board and of course hope to put up most of it. Altogether, I am a busy man.

With best wishes to the AMERICAN CARPENTER AND BUILDER, I am,

A. N. CLOWER,
General Contractor.



Ready for Winter Planing Mill Work

Ayers Cliff, P. Q., Canada.

Winter Work Editor "A. C. & B.":

Am writing you to tell you what I am going to do this coming winter to keep busy, and keep earning a few dollars. I have put up a small shop at odd times this summer, but have not had time to put any doors or windows in it yet. I have installed a 12-H. P. gasoline engine, surface planer, combination woodworking machine, and a mortiser, and shall work spare time this winter in making up windows of standard sizes with frames, and making mouldings, and have them ready for the following summer, as there is a great amount of building done here every year; and all such work has to be gotten from outside towns.

I shall also do any mission or other furniture work that I can get to do. I have to stop occasionally for a day or two, and make windows and frames for some who are in a hurry.

Trusting this may be of use to some brother in the trade, I remain,

C. H. ROBINSON.



Money and Health in Sleeping Porches

Saranac Lake, N. Y.

Winter Work Editor "A. C. & B.":

Having been a reader of it for the past ten years, can say that there has always been something good in the AMERICAN CARPENTER AND BUILDER; however, there are things which I consider not so good. To my mind the architect is to blame for a good many of our ills.

The house should never be designed for a place to den up, but for health, comfort and convenience—health coming first. How

many designs do you see with a sleeping-out porch for every bed room? For instance, take design No. 6713, page 45, September issue. You have a little sleeping-out porch in the back which is not convenient. It has no doors large enough to allow for a bed to be wheeled in and out; by that I mean a 3-foot bed. There should be French window doors, 4 feet in width. The sleeping-out porch is in the wrong place for the bed rooms, to begin with. It seems to me it would have been a great deal wiser had those two dormers been made into one, with flat roof, and extended to the porch plate with sliding porch sash in front and back, and on both ends to where they would strike the main roof, with a walled-in porch rail of 32 inches in height and windows sliding on same. Then walled straight across from corner to corner, direct over first floor plan of front wall with two sets of double doors so that single beds could have been wheeled in and out for sleeping-out purposes, which everybody should do that possibly can, both summer and winter.

I am no crank, but wish to give some good advice to the architects, and the carpenters and builders. I have been boss carpenter at the Adirondack Cottage Sanitarium for the past seven years. This is the first and best tuberculosis sanitarium in America; and I know by experience the beneficial results of sleeping-out porches. One rule of the sanitarium, that the people must observe, is sleeping out of doors, even when it is thirty below zero; and everybody, before they leave, will say: "Well, I have learned how to live, and take care of myself, and hereafter it will be sleep out of doors for mine."

Now, do not go to work and den yourself up for winter. On page 76, of the September issue of the AMERICAN CARPENTER AND BUILDER there is a subject on weather strips. That is all nonsense. Some of the best tuberculosis physicians in the world will tell you that fresh air and sunlight beat weather strips. It is unsanitary rooms and foul air that breed so much sickness, more than dust.

Now if the architects would encourage sleeping-out porches to the owner when he is designing his house, there would be more money in the architect's and carpenter's and builder's pockets, than by putting on weather strips; and more health and comfort to the owner. It would help lessen the dreadful white plague, from which thousands die every year, and thousands seeking health in the mountains at sanitariums. Therefore, I say the architect is to blame for a good many of our ills in designing the home. Encourage sleeping out of doors, and it will benefit all of us.

This is a good business for the carpenter and builder to turn his mind to during the dull seasons. There are thousands of cottages without sleeping-out porches. Why do you not go to the owner and propose the benefits of sleeping out of doors, or advertise in your local papers? Build a sleeping-out porch on every house. Arrange the bed room with double window doors, 4 feet in width, so a bed can be wheeled in and out. By so doing, the bed can be wheeled in by day, and then wheeled out at night when going to bed. The doors can be put in where a window is many times, and by using French windows, they get the same amount of light as before, and even more. Inclose the porch with sliding porch sash, finishing front up solid to the rail, the same as the outside finish. There is not a cottage in this health resort without sleeping-out porches, and most of them for every bed room. All these cottages are up-to-date, both in architecture, health and convenience.

I will close for this time, by saying, "Encourage sleeping outdoor porches, and make the dollars roll in during the dull season of the year." Will gladly give any information in

the following issues of the AMERICAN CARPENTER AND BUILDER, which is my home comfort.

J. A. WASHFER.

**More Winter Work Letters
Next Month!**



Artistic Shingled Bungalow

There are many ways of obtaining an unusual and distinctive effect in the construction of a home. The method of handling the chimney and the porch foundation of the design shown here is an example of this. They are constructed of vitrified blocks such as are used in street paving. An unusual effect is obtained with these blocks in an artistic way. In the construction a block here and there is turned so that the end projects out from the face of the wall. It presents an attractive way of breaking up an otherwise plain surface.

The walls of the bungalow are given a striped effect by the method of laying the shingles. They are laid in alternate wide and narrow courses. This gives a rather rustic appearance that harmonizes well with the brickwork of chimney and porch.

The living room is quite large compared

with the size of the house, which is consistent with the bungalow idea. One end of the room is taken up with a fireplace flanked with bookcases on each side. Facing the front from this room is a wide window, with a narrower casement window on each side. There are also small windows above each of the bookcases. A fairly large unobstructed floor space is attained by the dining room and the living room. These two are connected by a colonnade and cased opening.

Back of the dining room is a well arranged kitchen of the compact, convenient type and a large back porch that can be used for a kitchen annex in warm weather.

The side of the house opposite the living room, dining room, and kitchen is taken up by two bedrooms and a bath. The bedrooms are placed at the front and back corner of the house with the bath between.



Unusual bungalow of five rooms. Size, 33 by 41 feet. We can furnish complete set of blueprinted working plans and typewritten specifications for only \$6.00 per set. Blueprints consist of basement plan; roof plan; main floor plan; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6741.



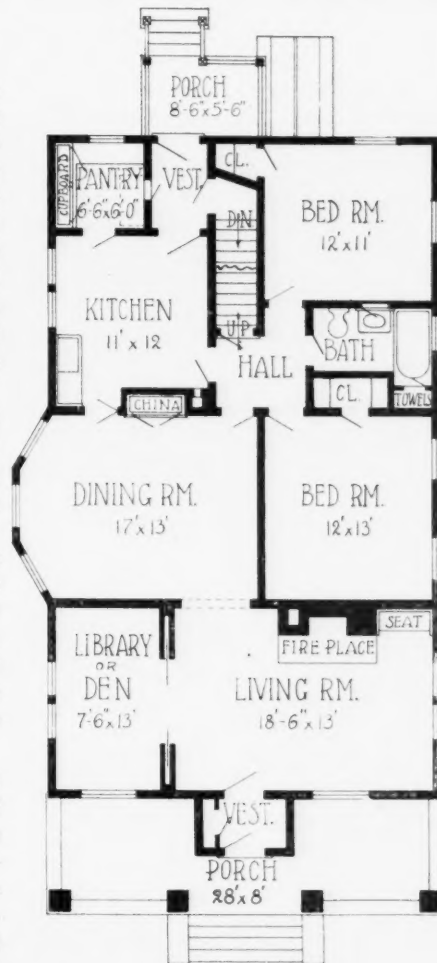
A Comfortable Cottage Living Room, Cheerily Lighted by the Two Corner Groups of Double Outward-Opening Casements. Built-in Window Seats Flank the Brick Fire Place, Making a Cozy Corner at Each Side.

Well Arranged Six-Room Cottage

One of the distinctive features of the house shown here is the vestibule built out onto the front porch. The arrangement of a double-door entrance into the house helps considerably in the heating problem. The cold air does not blow in each time that the door is opened. It gives the same protection that a storm door would, but is finished in such a way that it does not have the rough and unattractive appearance of the average storm door.

The living room is of good size and with the library or den extends across the front of the house. The fireplace in the living room is not placed on an outside wall in the usual way, but is against one of the interior walls. Next to the fireplace is a seat which, set back the way it is, makes a little cozy corner to add to the comfort of this room. The room is kept cheerful and well lighted by the two windows on the side and another window opening to the front porch.

It is often desirable to have a room that can be shut off from the rest of the house when occasion demands. The small room off the living room is designed with this object in view. It is separated from the living room by double sliding doors, which can be opened to make one large room across the



front of the house when needed. The sliding doors will cut this room off from the rest and will make a quiet part of the house. This room can be made very attractive with some well chosen furniture that will harmonize with the general arrangement of the room.

The dining room is almost as large as the living room and presents some very attractive features. A large curved bay extends along one side of the room, and gives a bright appearance to the room. In a recess in the back wall is a built in china case that adds to the convenience and beauty of this room.

Both an inside and an outside entrance are provided for the basement. This is an arrangement that will be appreciated by the lady of the house as it prevents the kitchen from becoming dirty because of the tramping back and forth thru the house in going from the basement to the back yard. The house is built high enough on its foundations so that plenty of head room is furnished for a heating plant.

The kitchen is well arranged and the sink is placed next to the two windows on the side so that it is well lighted. Housewives say that a well lighted sink is one of the most important things in a kitchen.

Storage space is provided for in the attic, which is reached by the stairs opening into the back hall. A room could be finished off here if desired.



Six-room homelike cottage. Size, 30 feet 6 inches by 46 feet 6 inches. We can furnish complete set of blueprinted working plans and typewritten specifications for only \$6.00 per set. Blueprints consist of basement plan; roof plan; main floor plan; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6745.

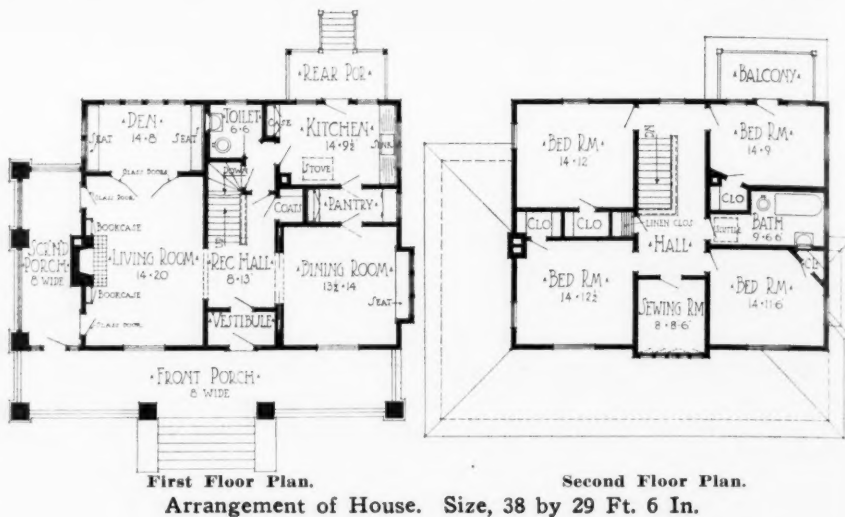
Handsome Home of Stone and Stucco

The massive comfortable appearance of the house shown here is due more to the stone construction of the porch pillars and the foundation than to anything else. Stone has a comfortable, substantial look that is found in no other material.

The porches in this design are particularly attractive. Across the front of the house is the front porch with its broad roof and the heavy stone pillars. Along one side is a screened porch that can be enclosed in windows so as to make a sun parlor. A door connects the two porches.

The house proper is finished in stucco which harmonizes well with the stone and the white trim around the windows. The projecting sills of the windows on the side with their small railings are pleasant decorative features. They are well suited to hold window boxes in the spring.

The right side of this home consists of a living room, a den and the screened porch. The living room is of large size with plenty of wall space so that furniture can be artistically placed around the room. In the wall between this room and the porch is a fireplace



which can be either made of stone similar to the chimney or of brick. The owner will have to decide which he likes better. In the end of the room is a double glazed door to the den. This room is almost a sun parlor itself with four windows in the back of the room and two on the side. An eight foot seat is also placed along each side of the room.

In the central part of the house from front to back is a vestibule, a reception hall, the stairs to the second floor,

and a toilet room with two fixtures.

The left side of the house is taken up by the dining room and the kitchen with its accompanying accessories. The kitchen is well arranged with a well lighted sink, a cabinet and a pantry.

There are four bedrooms on the second floor, one in each corner of the house. The bathroom is on the side between two of the bedrooms and there is a cheerful little sewing room facing the front through five casement windows.



Nine-room stucco house with stone trim. Size, 38 by 29 feet 6 inches. We can furnish complete set of blueprinted working plans and typewritten specifications for only \$12.00 per set. Blueprints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6715.



Shingle sided bungalow of artistic design. Size 41 by 38 feet. We can furnish complete set of blueprinted working plans and typewritten specifications for only \$7.00 per set. Blueprints consist of basement plan; roof plan; main floor plan; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6742.

Six-Room Bungalow with Stone Foundation

The bungalow as originally designed was intended for warm climates; but the usefulness of this type of house led to its adoption in all parts of the country under all sorts of climatic conditions. To accommodate the bungalow to these various conditions it has been necessary to make various minor changes. The original bungalow was built very close to the ground so that it was not practical to build a basement. When the bungalow was transported to the colder climates a basement had to be provided so that a heating plant could be installed. The northern bungalow is likely also to be built more substantially than the original.

In the house shown here, Design No. 6742, the foundation is made high enough so that there is plenty of room in the basement to install a heating plant. The foundation is made so that it is a picturesque feature of the bungalow. Many people treat foundations as necessary evils and never think of the possibilities of making the foundation so that it is part of the exterior decorative scheme. The foundation is made with rough stone, which harmonizes well with the shingle sides and the other exterior details of this bungalow.

The appearance of the porch is particularly attractive and inviting.

It is built under a separate gable from the house proper. The front door differs from the ordinary type. Its small panels of glass at the upper part and the heavy brass accessories make the door a pleasing feature of the front porch.

The floor plan shows six rooms in this artistic little home. Along one side of

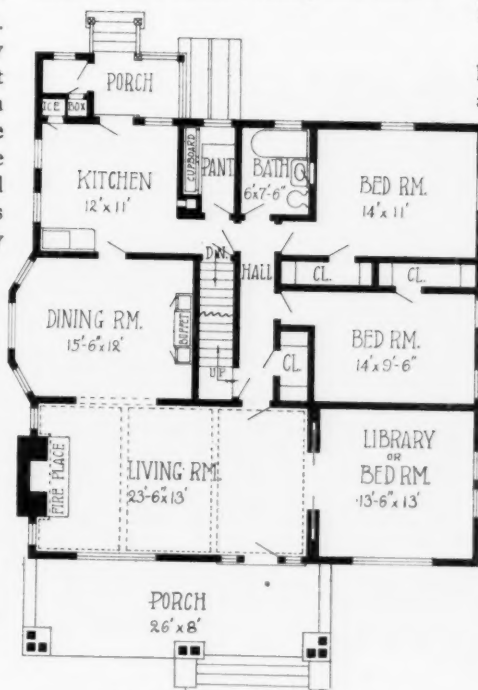
the house are the living room, dining room, and kitchen, and along the other are two bedrooms and a library. The library can be utilized as a bedroom in case of necessity. This room is cut off from the living room by double doors so that it can be used as a study or home office if the man of the house is obliged to bring work home that must be finished.

The living room is large and home-like, with the large fireplace in one end and the beamed ceiling. It is one of the long rooms that look particularly attractive with the fireplace in the end. The entrance from the front porch is directly into this room.

Back of the living room, and connected to it by a cased opening, is the dining room. On one side of the dining room is a three-sided bay window, and across the room from this is a buffet.

The kitchen is compact and convenient. In the back corner is an outside iced refrigerator which always aids in keeping the kitchen clean and in the best possible condition. It is well lighted by two windows along the side and also a window in the back, opening out to the back porch.

Overhead is a large, well-lighted attic for storage space and play rooms or home work shop. Stairs go up from the inside hall, making this convenient.



Floor Plan of Bungalow.
Size, 41 by 38 Ft.



Comfortable five-room bungalow cottage with shingled sides. Size, 24 by 41 feet. We can furnish complete set of blueprinted working plans and typewritten specifications for only \$5.00 per set. Blueprints consist of basement plan; roof plan; main floor plan; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6746.

Hip-Roofed Cottage of Five Rooms

A simple, comfortable bungalow is shown here as Design No. 6746. One of the features of this is the kitchen arrangement. The kitchen is compact and so arranged that all the work that is carried on is made as easy as possible. Any woman that has worked in a kitchen will tell you that nine-tenths of them are put in the house to fill up space. The kitchen is seldom considered in the original plan and the result is that the house owners have to be content with any old arrangement.

Kitchens and closets are coming in now for their full share of attention in house planning. They are most important parts of the house and deserve just as much consideration as the living room or dining room. An arrangement such as is shown here saves steps all the time and makes the kitchen work pleasant.

The main feature of this room is the built-in cupboard along one wall. Everything is spread out in front of you so that it is not necessary to walk all the way across the kitchen for one thing and then all the way back for another. The back porch is large and conveniently located, so that it will be a valuable addition to the kitchen in the summer.

The stairs to the basement open into this room and the basement is made large enough for storage purposes. Plenty of headroom is provided so that



a heating plant can be installed. The basement also has an outside entrance that is appreciated by many people. It saves the kitchen from much wear and dirt to have an entrance to the basement that can be reached from the outside.

The exterior of this house is finished in shingles, though they are not applied in the usual way. They are laid in alternate wide and narrow courses which gives an unusual appearance to the exterior. The projecting hip-roof dormer for the attic is a pleasant feature of the roof design. The trim around the windows and the posts on the front porch are white, while the walls of the building are stained dark.

The living room occupies the front part of the house with the exception of the one corner where the reception hall is located. The entrance to the living room from the reception hall is thru a cased opening. The living room is connected to the dining room in the same way.

Back of the reception hall along one side of the house are two bedrooms with a bathroom in between. Both the bedrooms are well lighted and are of comfortable size. Between the two bedrooms there is also a hall that connects with the rest of the house thru the dining room.

The living room is lighted by three windows facing out onto the front porch and there are two windows placed on each side the fireplace.

The Lowell School at Harvey, Ill.

THE accompanying illustration and floor plans show a large school that is fitted out with all the conveniences that are demanded at this age for school houses. A few years ago, for instance, a gymnasium was not considered necessary. It was a good thing, but was often the first place sacrificed if the plans were to be cut down in any way. Now nearly all schools have provision made for a gymnasium of some kind. The one shown here is no exception to the rule.

The problem is taken care of here by combining this most necessary part with the assembly hall. This is located in the basement, and as a much higher ceiling is needed than can be found in one floor, the room is carried up thru the first floor. At the first floor level there are galleries so that spectators can be accommodated in case athletic events or entertainments are being held in combination assembly hall and gymnasium. Above this room on the third floor there are two class rooms.

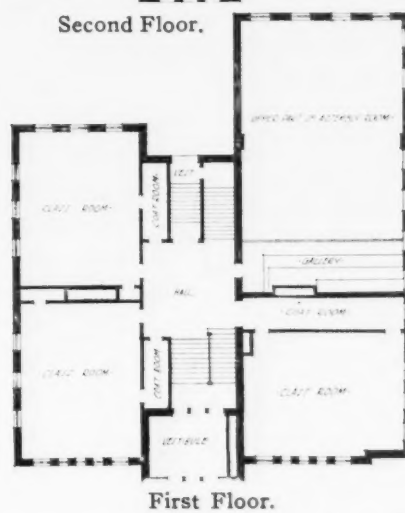
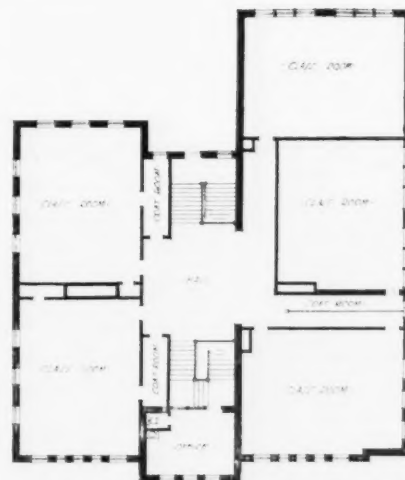
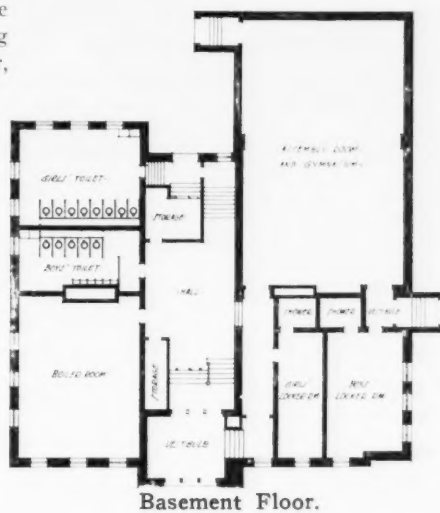
The building is built well off the ground so that a large and well-lighted basement can be secured. Near the gymnasium there are rooms provided for lockers. There are two of these rooms—one for boys and

the other for the girls. In front of these are shower rooms.

On the first floor there are three class rooms with the necessary hall connections and the stairs to both the basement and the second floor.

On the second floor there are five class rooms with the hall and also the office. Each floor is supplied with three cloak rooms.

This school house was one of the designs of Mr. G. W. Ashby, architect, who has done much school house work thru the Central West.



Photograph of New Lowell School at Harvey, Ill., G. W. Ashby of Chicago, Architect.

"Even if a Man Can't Have Four Hands Like the Woggle-Bug, He Can Double the Value of His Two Hands by the Use of Proper Tools"

THE MAN FROM THE LUMBER YARD

We were satisfied with the horse-car until we had the cable-car, and now we must have the electric. Many now ride in automobiles, whose fathers thought the carriage a luxury, and their grandfathers were satisfied with the ox-cart.

There has been as much progress in tool making in recent years as in transportation. No man can afford to do himself the injustice of not using the best tool that is TODAY produced for his work.

You can always secure information relative to the latest of any kind of tool or machine, by writing the "A. C. & B." —EDITOR.

MY wife took me shopping the other day. As the bundles increased and she took plenty of time to match some ribbon, it got mighty tedious until I found amusement in watching the clerks.

Some of them were peaches and worth looking at. When the ribbon was matched, we went down to the basement. My attention was attracted by a young man who stood by a pile of coverlets on which there was a sign, "\$2.00." The way he stood made the sign appear to be on him.

The Man with a Price

While my wife tried on shoes, I went over and asked him if the sign belonged to him, or to the coverlets. He saw the joke, but acknowledged that that was his price. He said: "I have only two hands and cannot see how I can do more than I am doing to earn more money."

As I waited for my wife to decide on the smallest shoe she could possibly wear, I meditated on the hopelessness of this clerk's position, from his viewpoint.

My mind at once went to the thousands of men, young and old, who read the "A. C. & B." and especially those who work with their hands. How can they be helped to produce more for themselves?

Are You 100%?

I have said a man must work with head and heart as well as hand. But he must have the right tools to be 100 per cent. When I was a kid, I learned that a good chopping-axe was not good for splitting; nor was it extravagant to have two axes for use, although I could have gotten along with one.

Friend wife finally released me with a warning as to what would happen if I lost any of the bundles.

The Clerk Who Knows

I know a clerk in a near-by hardware store who is posted up to the minute on the best tools, and never gets stale because his think-tank is always in action. I went to him and put up the question, if a workman



H. M. Woggle-Bug. Created by Mr. L. Frank Baum of "Land of Oz" Fame and Put to Work as a Carpenter by THE MAN FROM THE LUMBER YARD. He's Indeed a Fore-handed Guy.

could increase his capacity by any tools he had. "Sure thing," he said, "I have put many a young fellow on the way to better earnings by getting him to fix up a good kit. I notice that other things being equal, the man who has a good outfit is the last man to be laid off when work is slack." Being from Missouri, I said: "Show me."

For That Dull Feeling

Taking me by the arm, he stepped toward a wall-case, but stopped at a counter over which was a sign, "FOR THAT DULL FEELING." He said: "No matter how good a tool may be, or how skilled the hand that directs it, you get a bum job if the tool is not in good condition. Dull tools make dull, tired people."

He showed me a Tool Grinder which had a wheel that cuts in place of grinding, and does not draw the temper. Besides being able to sharpen any kind of tool on the face, you can sharpen drill-bits at exactly the right angle on the side of the wheel.

From a tray on the same counter he picked up a hand-saw file that he said "costs twice as much as the

ordinary file, but would do *twice* as much work in *half* the time." It had a stroke more than twice as long, and a tooth "set" to cut clean.

Seeing Saws

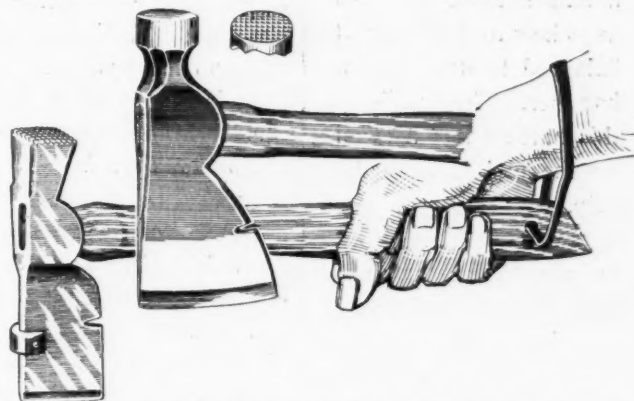
He then went to the wall-case, saying: "I am 'nuts' on these goods because we have everything right up to the minute. See this compass saw tapered off like a hand saw, so it will clear itself and not pinch *even* if the wood is green or wet. It is a corker for cutting a round hole when an electrician or plumber wants to cut out flooring and then replace it. Talking of a round hole; here is a saw that will cut a square hole without the help of any other tool and it has a handle that adjusts so you don't break your wrist



"Sure Thing," Said My Hardware Friend, "I Have Put Many a Young Fellow on the Way to Better Earnings by Getting Him to Fix Up a Good Kit."

when making the incision in the floor. The thin back compass saw doesn't pinch because it has no friction. Here is a hand saw that will do as much work as any other, altho about half as wide,—less width, less friction, and less of that tired feeling. I occasionally sell an ordinary back saw, but this one that has a cross-cut on one side and a rip on the other, and adjusts so you saw just so deep and no deeper; skins them all. I try to get every man to carry one of these metal-cutting blades. It will saw thru wood, leaving a clean, smooth surface, or nails, bolts, gas pipe, etc. I had one customer that cut an iron column out of a store front with one."

He then handed me a saw that I at first pronounced



Hatchets with Scored Safety Head Make Safer and Faster Work. Shingling Gauge and Leather Wrist Thong are Improved Efficiency Features.

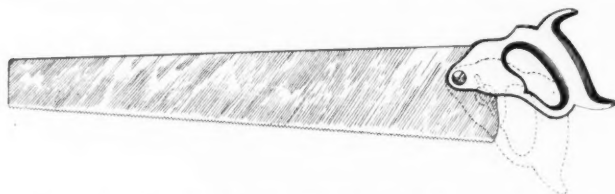


This Hammer Can be Used by a One-Armed Man. It Adds 2 Feet to Any Carpenter's Reach.

a freak because of the manner in which the handle set on the blade. But he demonstrated that more work could be done with less strain on the arm than with any other arrangement of handle. It is a saw that gives a full 26-inch stroke, yet will go into a 26-inch tool box.

On the Level

Moving over to a display of carpenter and mason levels, he showed me a sort that always told the truth instantly, no matter which side or end came up.



This Hack Saw Will Go Thru Nails, Steel Beams—Anything. Handle is Adjustable.

Concerning Hammers and Hatchets

He had a number of new wrinkles to show me in hammers and hatchets. I never appreciated before the fact that a large part of the arm's strain for a workman was because of his having to grip the ordinary handle so firmly in order to center the blow.

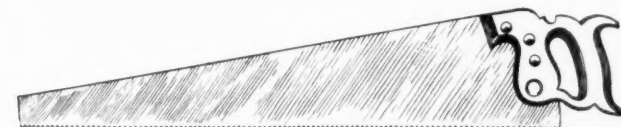
The type of handle my friend recommended was one that would always center even when held loosely in the hand.

Among a number of new features I remember a roofer's hatchet with a special scored-head, having an arrangement that set the shingle just so much to the weather as desired; also a half hatchet made so as to hew to the line, and balanced to drive like a hammer. The handle of this hatchet had a swell on the end to ease the grip.

He showed me both hammers and hatchets with safety heads, and explained that these made not only for safety to the user, but for greater speed in use.



This Flooring Saw and a Man Can Produce a Square Hole.



No Tired Feeling when Using this Narrow Saw.

"About what a young fellow would spend foolishly in a month."

As I left my enthusiastic friend, I remembered a picture I saw some time ago of H. M. Wogglebug, T. E. The H. M. stood for highly magnified. This Wogglebug was as large as a man, but still had four arms, as

wogglebugs always do. T. E. stood for thoroly educated. At any event, this Mr. Wogglebug was four-handed, as you see from the picture which our artist has reproduced.

When I bring to mind all these convenient toil-reducing tools I regret that my readers could not have four hands like H. M. Woggle-Bug, T. E.

Even if a man can't have four hands like the Woggle-Bug, he can double the value of his two hands by the use of proper tools.

I am going to say something about educating the hand and head in my next letter. Some will find it worth reading. Yours for 100 per cent,

THE MAN FROM THE LUMBER YARD.

Saw Dust

The workman who is most dependent on efficient tools, is most independent.

For the best work, get the tool that is an "isser," not a "has been."

The owner of the right tool works less and earns more.

In figuring the worth of a superior tool, don't forget the time it saves.

The tool that enables you to earn more is worth its cost.

Tools that save the minutes and muscles of the user, mint the most money.

Like breeds like. Good tools make good workmen.

The Pennsylvania R. R. recently replaced a hundred locomotives with others that did more work. Neither can YOU afford to use an out-of-date tool or machine.

Every hour you use a poor tool you add to its cost.

It is dangerous to hang your reputation for good work on the services of a poor tool.

Good temper in his tool keeps good temper in the user.

Beware of tools whose only merit is a reputation.

An inefficient tool may cost less, but you pay more every time you use it.

The workman is known by his tools. What reputation do yours give you?

Don't look for sweetness in the garbage can, nor quality in the junk shop.



Framing a Gambrel Roof House

NOTCHING OUT RAFTERS MAKES WORK EASIER AND BETTER—HOW TO FIGURE A GAMBREL CORNICE

By I. P. Hicks

THERE is something about the framing of a gambrel roof house that is just a little more than the ordinary framing. It is no really difficult matter, yet it may be of more or less interest to the carpenters and builders of the country. As a rule this kind of a house does not have a very wide cornice, as it is not very practical to make the cornice much more than 12 inches wide. When a gutter is put on it is usually of the box form.

There is no fixed rule for the slopes of the roofs; this is established by the designer, according to his judgment in planning the house and according to its size and the best lay out of the rooms on the second floor. It is customary to set the studding which form the walls of the rooms, about 2 feet back from the main outside wall plate of the first story.

There is nothing particularly complicated about the framing; but it is well to notice a few points of special interest. The lower end of the first set of rafters should be notched at the bottom as shown at A to sit on the plate, shown on top of the ceiling joists. If these rafters are cut to rest wholly on the plate, then it would be necessary to use furring blocks on the side of the house in order to have something to nail the roof sheathing to that runs down and forms the back of the gutter. I prefer notching the rafters and letting them run down far enough to make a nailing for the roof sheathing.

At B, the top of the first set of rafters, another notch is cut. This is mostly to facilitate raising the roof, because the perpendicular studding are not often put in before the roof is raised, and the notch in the rafters makes it easier to keep the rafters in place while they are being securely nailed or spiked.

The bottom of the second set of rafters is also notched to fit the plate, shown at C. This facilitates the raising of the second section of the roof as the rafters can not slip over the plate while being raised, making the nailing much easier.

Now an important part, one that is especially interesting to the carpenter, is the cost of construction in this kind of work. After the lumber bill is made out

so that you know the feet board measure contained in the timber required, you can figure \$10 per M feet of lumber for the construction work of framing. The sheathing can be figured at from \$8 to \$10 per M. The shingling at \$1.75 to \$2.00 per M.

The cornice can be figured by the lineal foot per member as follows: The frieze, wide members, 4c;

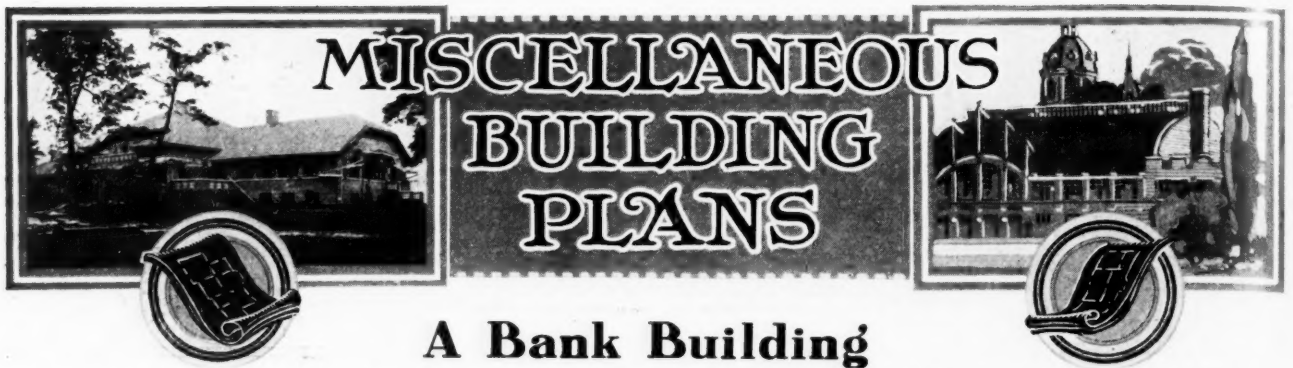


Framing for Gambrel Roof as Recommended by Hicks.

plancher, say 4 boards of ceiling, 1 1/4c each, 5c; fascia, 2c; bed mould, 1c; crown mould, 2c; cap over crown mould, 1c; front side of gutter, 1c; bottom, 2c; making a total of 18 cents per lineal foot for the labor. This will be found a fair average price for a cornice of this kind. The manner in which we have analyzed this cornice also shows how you should go to work to arrive

at the cost of constructing any other kind of a cornice. Take each member and you can judge what you can put it up for, then add the cost of all the different members and you will establish a price per lineal foot for the complete cornice. Figure the lineal feet of cornice and you can arrive at a figure that will be safe and also quick and easy.

For the cost of the gutter, which is usually made of tin, figure 17c per lineal foot if made of tin 20 inches wide, and 23c per lineal foot if made from tin 28 inches wide. The above figures on tin gutters should be sufficient for the best quality of tin gutters.



A Bank Building

THIRD OF A SERIES OF DESIGNS OF PUBLIC BUILDINGS OF VARIOUS KINDS, WITH PERSPECTIVE VIEW, CONSTRUCTION DETAILS, AND FLOOR PLANS

THE most decorative building in a town is generally the bank building. It depends perhaps more than any other business on handsome surroundings to attract people and give them confidence. In almost all other branches of modern business it is possible to compete with a man who has a much better building than your own. You can do this in various ways. Handling a better line of goods or displaying it more advantageously will often cause people to come into your place of business just to look around. Then by proper salesmanship you can get them to come again, and sooner or later you land them. You can also secure the good will and trade of people by offering service of a better grade than your competitor. If you are in a mercantile business you can specialize in quick deliveries, discounts for cash, credit arrangements, etc.

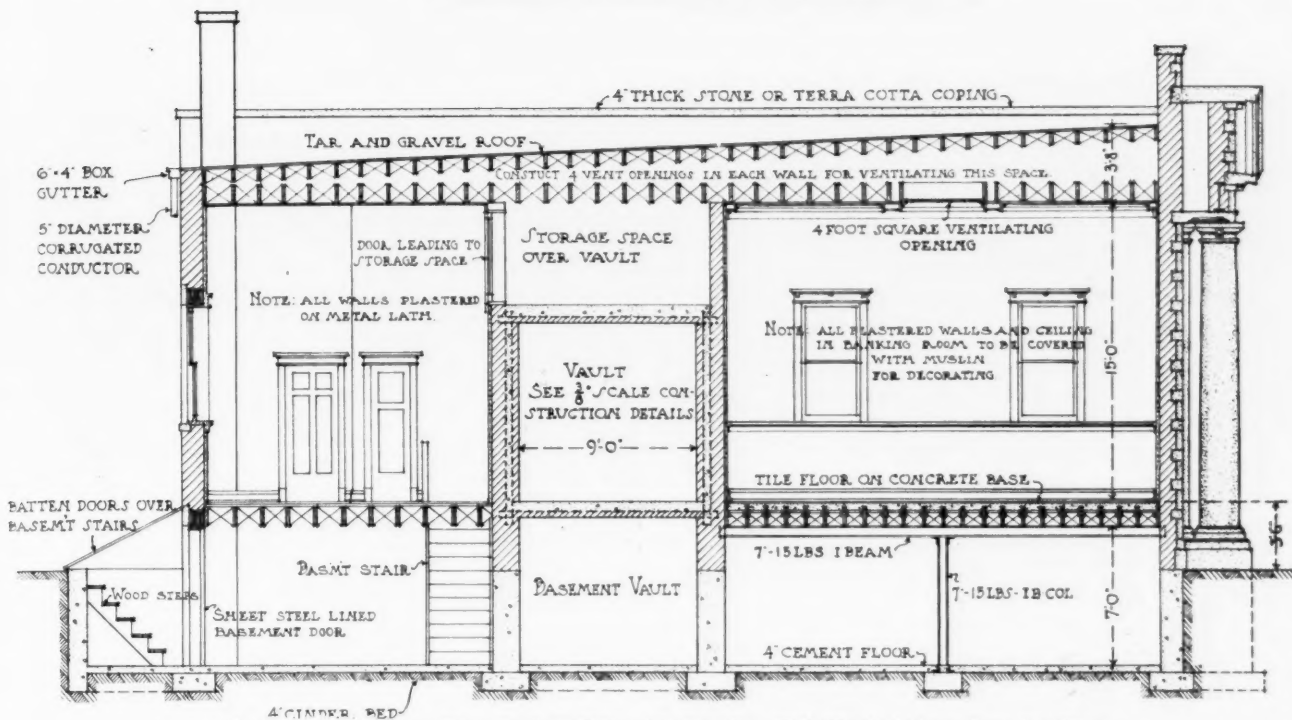
None of these opportunities are possible for a bank on the scale that they are for any other type of business. A bank can offer a few special inducements to depositors, but they are not dealing with a commodity that admits of the special arrangements such as other

businesses. They have to depend on appearance more than any one else. An old bank in a town may keep its business because everybody knows the cashier or the president and has confidence in them. The new bank, to compete with them, has to offer mighty attractive appearances so that people will like to go into their building. They cannot offer any particular advantages as a general rule that the other bank cannot offer also.

It isn't very often that you see a bank that has been established in some made-over building. The construction has to be of such a nature that very few buildings can be arranged as banks. Very heavy foundations, walls, and floors are required so that safes and vaults will be protected to a large degree. There are, of course, exceptions to every rule, and some buildings have been built over so as to make very good bank buildings. Nearly always, however, the bank builds its own building as it is necessary for appearance sake as well as for the sake of strength and safety.



Perspective Sketch of Very Attractive Small Bank Building, Constructed of Brick and Terra Cotta. Dimensions, 25 by 54 Feet. When Writing About This Design Please Refer to Design No. 6748. Price of Blueprints and Specifications on Application.



Longitudinal Section Thru Bank Building (Design No. 6748) Illustrated on Opposite Page.

As shown in the accompanying details, the walls are made very heavy, as are the foundations and the floors. Also the vault that should be built cannot be located very well in old buildings, but must be included in the plans as it is in this instance. The walls of this must of course be made very heavy, so that it will be fireproof as well as burglar proof. The heavy construction features of the building make it necessary to have heavy foundations so that they may be well supported. The floor is made strong because of the many people that may be on it at one time, and so it can support small portable safes such as are used in all banks.

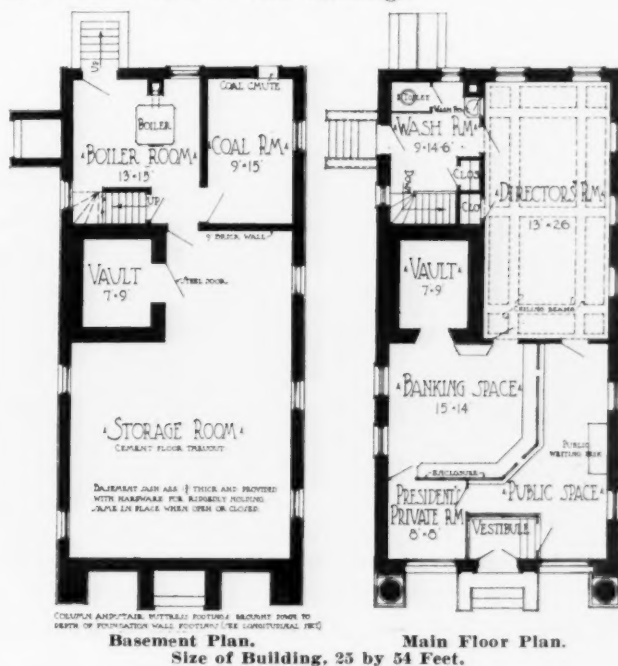
Nearly every town has a bank, and the builder who has good, practical ideas on their construction will often get a chance to do this work. If a local man can handle this kind of work, it will not be necessary to import a firm from some other location. Even if a man does not get the contract, he can get a certain part, such as the interior trim, etc.

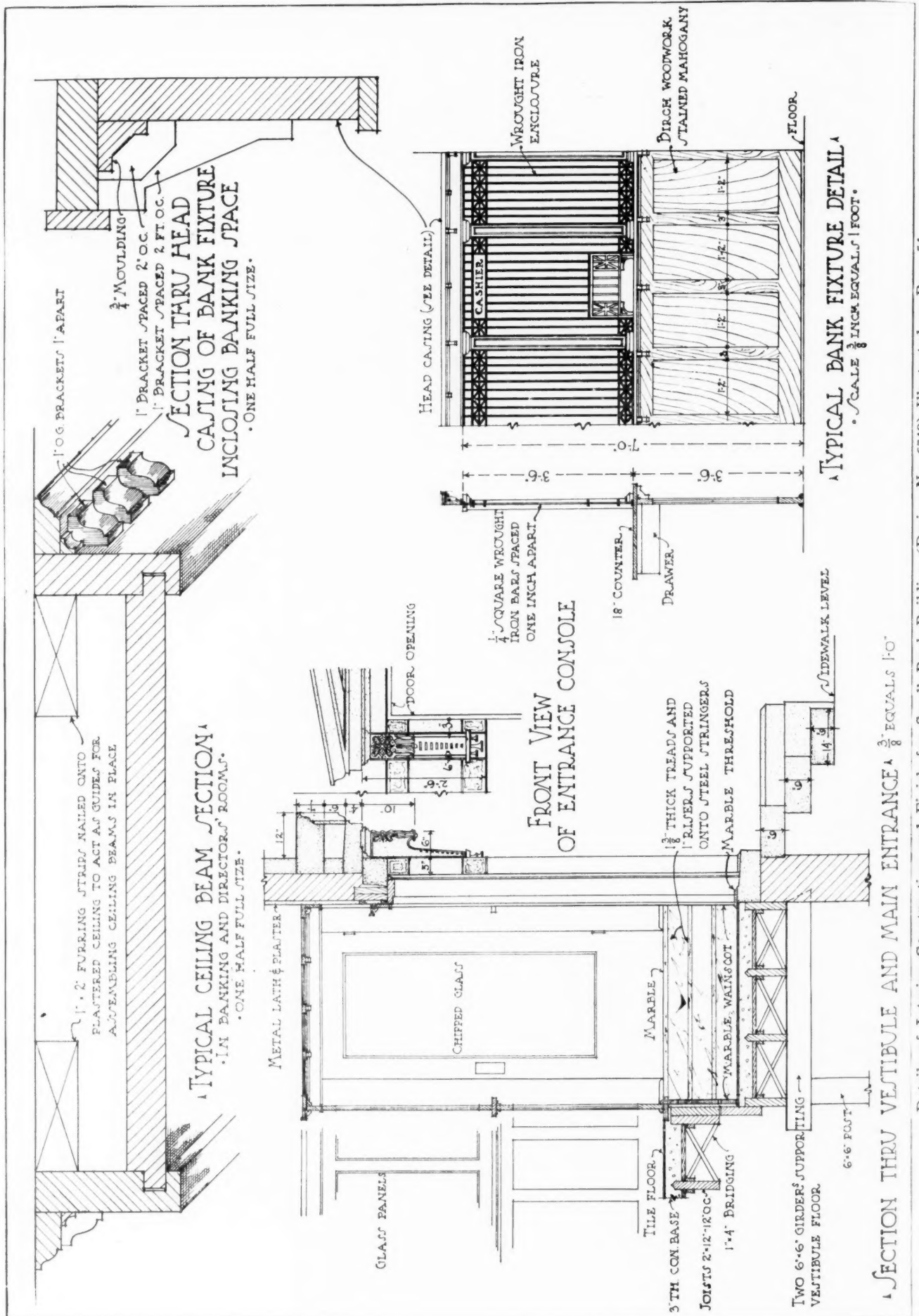
The longitudinal section shows many of the details of construction of this building and gives an idea of the class of work required for smaller bank buildings. One of the special features is the method of building the floor under the front part of the bank, where the public and banking spaces are located. It also shows the massive character of the walls and the foundations that are necessary to support them. Attention is called to the walls surrounding the vault, particularly. The size of these is also shown in the floor plan. The roof is built with a slant from front to back, so an air space is left between the roof and the ceiling. This is ventilated, as mentioned on the cross section, by four openings in each of the walls.

The floor plan shows the general arrangement of the

rooms on both the main floor and the basement. In the basement there are located the storage room, coal room, boiler room, and the basement vault. The entrance to the main floor is into a vestibule which opens to the right into the public space. The opposite front corner is occupied by the president's private room. The banking space is directly back of this room. The vault, the directors' room, and a wash room are located in the back part of the building.

The larger detail sheets show some of the various smaller construction features of the building. One of the sheets shows the construction details of the vault and also an elevation of the front which illustrates the many various little features that are used in making decorative fronts in bank buildings.







Details of Interior Construction and Finish for Small Bank Building (Design No. 6748) Illustrated on Page 54.



Noon Hour Talks by the Boss Carpenter

Talk No. 41. Columns in Mill Construction Type of Building— Construction Series No. 5

THE BOSS TELLS ABOUT TIMBER COLUMNS IN MILL CONSTRUCTION, AND SHOWS DETAILED CALCULATIONS

“AT the close of our last talk,” said the Boss, “we had reached the point where we were ready to begin the calculations to find the size of timber columns needed in a mill constructed building. The width of the building was taken as 48 ft., and the size of the floor bays or panels was 8 ft. by 16 ft. Our floor load was assumed to be 150 pounds

footings below the basement floor. The general plan of the roof construction is similar to that shown for the floors in our last talk.

“The roof and floor loads are carried to the columns by the main girders which rest upon post caps at the top of each column as shown in Fig. 71. These post caps may be of cast iron, malleable iron, or steel,



Fig. 71. Two Views of Wooden Mill Construction Type of Commercial Building.

per square foot live load in addition to the weight of the floor itself.

“Our problem today is to find the size of the columns on each floor needed to hold up the load which will be carried by each set of posts. We will assume that the building consists of three stories and basement as shown in Fig. 71. The columns begin at the roof and extend downwards in a straight line to the

and are of the general type shown in Fig. 72. The cap fits the top of the post, and not only serves as a bracketed support for the girders, but also forms a plate to hold the column from the floor above. The ends of the columns should be squared off nicely before they are put in place, so as to have an even bearing over all parts of the column end. Columns should not be allowed to rest directly upon the tops

of girders, since the shrinkage of the girder timbers may cause settling in the columns, or tend to cause an uneven distribution of the bearing stress over the end of the columns. Another danger in this method of support is apparent in case a girder should fail in fire and fall from its place. This would throw the end of the column from its bearing support and would probably cause failure in the structure.

"Where it is not desired to carry a column through a floor and down to the cap of the column on the floor below, a cast-iron pintle such as shown in Fig. 70, Talk No. 40, may be used. The top part of this pintle forms a cup or flange for the support of the end of the column, while the cylindrical lower part fits in between the ends of the girders on the post cap and carries the load from above to the cap below.

"There are many varieties of iron and steel post caps used in construction. Some types provide for fastening the columns and girders to the cap, while others allow these members to rest freely on the cap, depending upon the weight on the members to hold them in place. While some authorities advocate the fastening of girders in such a manner that they will be rigid at the columns, others claim that the girders should be supported freely at the posts so that in case the girder falls, it will clear itself both from the posts and the walls, leaving these parts of the building unharmed.

"The lower end of the posts in the basement should rest upon an iron base plate about 2 inches in thickness, and raised above the floor level sufficient to keep water away from the end of the post. This plate may be placed upon a stone or concrete footing or pier as shown in Fig. 71. The size of the pier will depend upon the load to be carried and the kind of soil in which the pier or footing is placed.

"The New England Mutual Insurance Companies have been responsible in a large measure for the details of the mill constructed type of building as it is erected today. These companies advise that a 1½-inch diameter hole be bored thru the axis of each timber post and a ½-inch cross-hole near the top and bottom to give an interior circulation of air. It is claimed that this attempt at ventilation prevents decay and dry rot, but in ordinary buildings the posts are commonly used solid.

"It is a wise precaution to leave all heavy timber work of this kind in its natural condition for at least three years so that it may become thoroughly seasoned before painting or varnishing. All corners should be rounded or chamfered so as to expose no sharp edge to attack by fire. All surfaces should be planed and left in a smooth condition.

"The different cities of the country vary to some extent in the details of their building ordinances, but they nearly all agree in regard to the essentials of standard mill construction. It is commonly specified that the posts which support the roof shall have a

cross-section of at least 64 square inches (8 in. by 8 in.), and that posts of all other floors shall have a cross-section of at least 100 square inches (10 in. by 10 in.). We must bear these restrictions in mind in making our calculations.

"Before we can find the size of post needed in the top floor of our building, we must find the amount of load on that part of the roof which is carried by one post. The size of the roof panels will be 8 ft. by 16 ft. as in our floor calculations of Talk No. 40. The roof is flat as shown in Fig. 71, and consists of yellow pine plank 3 inches thick (2⅝ in. dressed), spiked directly to the heavy roof timbers and covered with

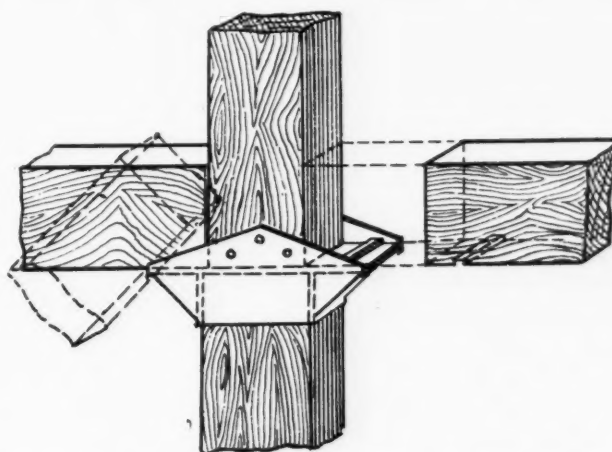


Fig. 72. A Type of Post Cap Used with Self-Releasing Girders.

4-ply or 5-ply tar and gravel roofing. The roof timbers are at least 6 inches in thickness, even for the lightest roofs, and are held in place as in the case of floor girders. A slope of ½-inch to ¾-inch per foot is given to the roof, and an incombustible cornice protects the roof when there is danger from fire in neighboring buildings.

"The load on one post in the top story is found by assuming that the post supports the load on a panel of floor 8 ft. by 16 ft. in area. This load is made up of the weight of the 3-inch plank, the weight of one roof girder, the weight of the 5-ply gravel roofing, and an allowance for the weight of snow which is likely to rest on the roof. The weight of timber may be taken as 3 pounds per square foot of material 1 inch thick, or 8 pounds per square foot of roof surface 2⅝ inches thick. The weight of the 6-inch by 12-inch roof timber will add but little to the general load per square foot of roof surface, and can be neglected without serious error. The weight of the 5-ply gravel roofing may be taken as 6 pounds per square foot of roof surface. The allowance for snow load will vary in different parts of the country and may be taken from the following values:

"For flat roofs in Southern or Pacific Slope States, 5 pounds per square foot of roof surface; Central States, 30 pounds per square foot; Rocky Mountain States, 35 pounds per square foot; New England

States, 40 pounds per square foot, and Northwestern States, 45 pounds per square foot. If we assume that our building is in the Central States, the snow load will be taken as 30 pounds per square foot in our calculations.

"The total load per square foot of roof surface will be $8+6+30$, or, allowing for the girder also, about 46 pounds per square foot. Since the area of roof supported by one post is 8×16 , or 128 square feet, the total central load on the post is 46×128 , or 5,888 pounds. Call this 5,900 pounds for easy calculation.

"In Talk No. 39, we used a number of formulas for finding the size of timber columns of different materials. If we are to use Georgia pine in the columns in this building, with a factor of safety of 5, the formula taken from Talk No. 39 will be as follows:

$$\frac{W}{A} = 4,000 - \left(\frac{8}{10} \times \frac{l}{d} \times \frac{l}{d} \right)$$

"In this formula, W is the total central load in pounds, A is the area of cross-section of column in square inches, l is the length of the column in inches, and d is the least dimension of the column in inches. Since a square section will give the best results in a timber column, A will equal $d \times d$, and d will be the side dimension of the square. The length of the unsupported part of the columns in this building will be taken as 12 feet.

"Filling in the formula, taking care to use the factor of safety of 5, we have,

$$\frac{5 \times 5,900}{d \times d} = 4,000 - \left(\frac{8}{10} \times \frac{12 \times 12}{d} \times \frac{12 \times 12}{d} \right)$$

"Solving, we find that $d = 4$ in. (approx.) This indicates that an 8 inch by 8 inch post, which is the smallest size allowable in this type of construction is amply safe for use.

"The posts of the floor below will have to carry a central load of 5,900 pounds from the post above and the load brought to them by the girders of the top floor. In Talk No. 40, we found that the load on a panel of floor 8 ft. by 16 ft. in this problem was 20,736 pounds. Adding these two values, the result is 26,636 pounds. Using this value in the formula above in place of the value 5,900 and solving, we find that d is about 7 inches. Again the ruling that no column below the top floor shall be less than 10 inches by 10 inches, will govern the design, and a 10-inch square timber post will be used.

"The columns of the first story will carry a load of 26,636 from the column above and a load of 20,736 from the floor of the second story. Adding these values and using the result 47,372 pounds in the formula, we find d is about 8 inches. Again a 10-inch by 10-inch timber post is sufficient.

"The columns in the basement, if of wood, will carry a load of 47,372 plus 20,736 pounds, or 68,108 pounds. Using this value in the formula as before,

we find that d equals about 10 inches. Therefore, a 10-inch by 10-inch post could be used.

"Other posts on each of these floors will be of the same size as those found by the calculations since they support similar loads."



Black and White—the Newest Decoration Colors

By Malcolm Strauss

Black and white is distinctly a new note in decoration. Whether it has struck a responsive chord in American favor is an open question. Personally, I believe it is here to stay. People of conservative taste, who prefer the more sombre color combinations one sees everywhere, have already cataloged this startling departure as another of those "twentieth century freaks—no one knows whence they come or where they may go."



The Author's Suggestion for a Black and White Wall Panel.

But the person who is willing to cast a keen and critical eye over the virtues of black and white, and not reject it simply because it is an innovation, will find many points that speak well for this bold, yet cultured treatment.

Black and white, as we all know, form the greatest possible contrast. Scientists tell us that black is the absence of all colors, and white, the presence of all colors. Alone, white is cold, and black itself, deadly dull, but an artistic combination of these two extremes gives an interesting individuality that cannot be obtained by any other combination of colors. It is simplicity itself, and as it is universally admitted that the beauty of a plain wall needs no emphasis, surely this form of silhouette decoration may serve us well here. Black and white shows the value of contrast as never before appreciated. The smallest room will yield to this treatment and assume a much-sought individuality.

Today but few American homes have a black and white room. Thus far this unusual combination has been used largely for commercial or advertising purposes. In New York City, for example, several of the smartest restaurants have been quick to see the possibilities of this treatment and have used it with remarkable and much-talked-about effect.

That black and white is likely to find a place in the home seems to me a logical conclusion. It is particularly adaptable to drawing-rooms, music-rooms, entrance halls, and foyers, due to its distinctive note and its contrast with the overworked, standard color combinations.

To be effective, black and white must be used in moderation. Tastefully used in one, or surely not more than two rooms in a house or an apartment, black and white is pleasing and desirable. But applied indiscriminately wherever a wall or partition may be found, it is blatant and impossible.

Black and white might well be termed "the bass-drum note in decoration." Too much of it will drown out any and everything near it; properly used, it is distinctive and pleasing.—*The Dutch Boy Painter.*

Lining up for the Store Front Business

Chapter I, The Nine Basic Layouts

FIRST OF A SERIES TO BRING OUT BOTH THE COMMERCIAL POSSIBILITIES AND THE LATEST METHODS OF DESIGN AND CONSTRUCTION OF THE UP-TO-DATE ALL-GLASS STORE FRONTS

By Our Store Front Man

MILLIONS of dollars have been spent in the erection of store fronts during the past ten years.

Have you made your share of the profits?

Here is a branch in building that is probably different than all others you are interested in simply because it combines the commercial with the structural. The successful builder of store fronts today is the man who thoroly comprehends the underlying motive. He's the man who realizes that *store fronts are built to sell merchandise—not simply to keep out the rain and admit a little daylight.*

It is a fact that from 60 to 80 per cent of the store

business streets in your town and see how little thought has been given the element of individuality in store fronts.

It is our advice that you make it a rule to build individuality into each front—it not only will result in a better investment for the man who foots the bill, but will help wonderfully in establishing yourself as "the Store Front man" in your locality—all of which makes a more profitable business.

Make each front you build stand out—make it look modern—make it make more sales for the retailer behind it. The greater his profits thru his front, the stronger will be his endorsement for you as "the Store Front man."

Those new fronts that have been properly designed and built during the past few years have produced almost unbelievable results. And this includes small town fronts as well as those in the larger cities. In fact, the better, small, individual store fronts are found in the small towns. It is nothing unusual to find beautiful, well-balanced and thoroly modern store fronts in towns of less than 1,000 people.

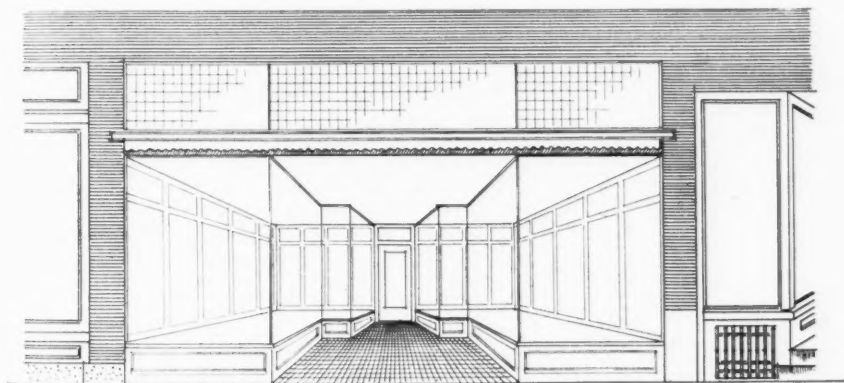
The time it takes such fronts to pay for themselves by the increased business depends upon the local possibilities and support given by the retailers. Some produce enough net profit on the increased business during the first six months to pay back the total investment. Some require longer—a year—two years. But in every instance it can be shown to be an unusually profitable investment.

Series to Present Business Getting Facts About Store Fronts

In the articles that will follow, the "arithmetic" of store fronts, from the retailers' standpoint, will be discussed. This will enable you to approach your

prospects and to talk to them from the angle that most interests them. While the retailer wants his front to be well built, his foremost thought is, "Will it pay?"

Here is shown an elevation of a modern front. Also plans of nine different types. The almost unlimited number of designs



Perspective View of Store Front Arranged According to the "Zigzag" Type.

fronts in this country are alike in design and appearance; and can you offer any logical reason for it? The only one I can think of is, "the line of least resistance."

How simple it is to say to the retailer who has called upon you to build his new front: "What style do you want—something like Smith's new front?" Your patron may be a jeweler and Smith may sell furniture, or clothing, or groceries or bicycles.

Plan Each Front for the Goods it is to Display

The one important question to ask yourself when called upon to build a front is: "What has this store to sell—what size is the front, and what shape windows are required to properly show the merchandise?" Isn't it reasonable to assume that to display rings and watches properly requires an altogether different style of front than does the display of a dining room suite or a refrigerator? And still—we just go up one side and down the other of the

SO important is the field of store fronts that we feel the articles on this subject which will follow, will be of particular interest to you. As in the other departments, we offer you here our assistance in helping to develop the store front business in your town. **OUR STORE FRONT MAN is at your command; write and ask him any questions and call on him to help you out on any special problems in store front work.**



Fig. 1. Typical Side Entrance Front.



Fig. 2. Side Entrance Front with Additional Display Case.



Fig. 3. The Most Common Type with no Individuality.



Fig. 4. Design Which Can Be Divided into Parts. More Practical than Fig. 3.

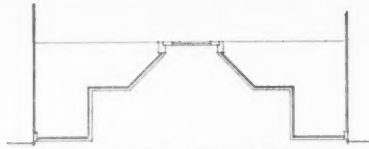


Fig. 5. One of the "Zigzag" Type of Store Fronts.



Fig. 6. Wide "Zigzag" Front Which Permits of an "Island" Show Case.

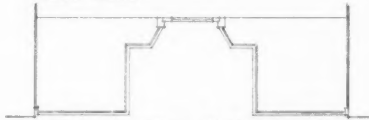


Fig. 7. "Zigzag" Front with Narrow Entrance.

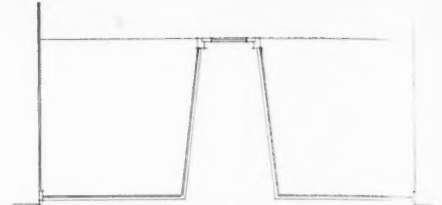


Fig. 8. Not a Practical Style of Front, Because of Narrow Vestibule.

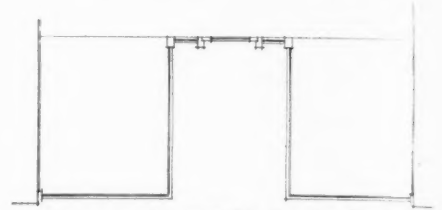


Fig. 9. Design Suitable for the Display of Furniture, Etc.

are elaborations of the basic types.

The price of every front absolutely depends

upon the materials that enter into its construction; and for that reason it is impossible to set a price on any design without first considering the various details.

Fig. 1 shows a typical side entrance front. There are thousands of this type. Fig. 2 shows how the same space can be increased in efficiency by incorporating a small case at the left of the door. This case can be used for the display of small, detail articles and at the same time allows ample space in the larger compartment for the display of articles of the average size.

Fig. 3 illustrates the style of front which is most used—regardless of the merchandise to display—and possesses absolutely no individuality. The same space can be utilized as shown in Fig. 4, and the cost is increased only a very small amount.

Fig. 4 can be divided into four compartments, while Fig. 3 can never contain more than two.

Figs. 5, 6 and 7 show the various treatment of the "zigzag" style of front, the style adopted depending upon the merchandise to display.

Fig. 6 can be designed to incorporate an "island" show case, provided, of course, it will not congest the vestibule space. There should be a distance of at least 4 feet 6 inches between all points inside the vestibule.

Fig. 8 is not a practical style of front because the vestibule space is not large enough for people to pass in and out of the store without crowding or jostling. Fig. 9 shows a more practical treatment of a front of this nature. The glass panels on either side of the door, in addition to enlarging the vestibule space, make it possible for the passer-by to view the interior of the store.

Fig. 9 is especially suitable for the display of furniture, however, the same principles can be carried out in designing windows for the display of the smaller articles, such as jewelry.

As stated before, there is an unlimited number of designs of store fronts which can be adopted, but in each case the style used should depend upon the work to be done rather than the amount of money to be spent.



Details of a Sun Porch

WORK OF RALPH W. ERMELING, ARCHITECT

THE sun porch has become more and more popular of recent years and now nearly all houses that are being built are having sun porches built onto them. Also many old houses are being fixed up so as to provide a sun porch. This is often accomplished by making over a back porch or a detached room that is suitable for this purpose. The glass in the porch can be removed, in many instances, in the warm weather and screens inserted in its place.

The sun porch is likely to be the most used place in the house due to its cheerful, bright coziness.

In many designs the entrance to the porch from the other room is thru full-glazed double doors, but in this instance the separation from the rest of the house is merely indicated by two posts and a balustrade on each side of a cased opening. The details of this porch are shown on the opposite page.

Under one of the balustrades is a cabinet which will be handy for storing various things. In case the room adjoining the porch is a dining room, the cabinet may be used for china. If the living room adjoins, it can be utilized for books or games. The construction of the cabinet and the seats can be seen at the upper part of the detail sheet.

One of the seats is movable and the other is fixed. This will permit of a table being placed near the fixed bench and the other moved up to it. Breakfasts and other light meals can thus be served out in the sun parlor or open air porch.

Above the back of the seats on each side are windows which are divided into small panes at the top. The paneling on the seat combined with this gives an attractive paneled effect on the entire wall. The lamps on the posts are also artistic features.



Details of Construction, Plans and Perspective View of Artistic Sun Porch. (For Description See Opposite Page.)



Concrete Above as Well as Below in This Basement Barn

DETAILS OF REINFORCED CONCRETE WORK FOR MAIN BARN FLOOR OVER DAIRY STABLE—SANITARY, FIREPROOF AND ECONOMICAL

By H. Colin Campbell, C. E.

NO one at the present time gives much thought to any other material than concrete for barn foundation work. Moreover, it is just about as easy and cheap to carry a barn foundation up far enough to complete at least the first story. Then, if one goes a step farther, and makes the mow floor of concrete, the lower portion of the structure becomes strictly fireproof. If this basement is intended for use as quarters for dairy stock or horses, the animals are thoroly safeguarded against fire.

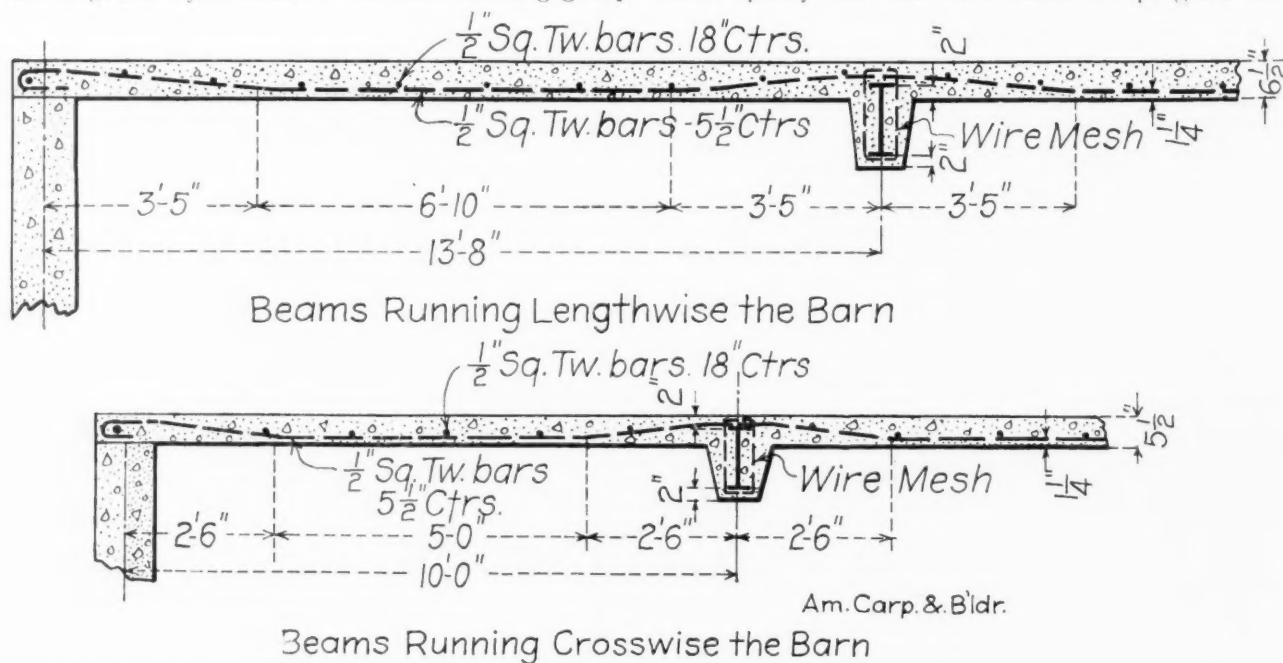
This is a practice which is becoming more common and has recently been shown preference in the construction of a 40 by 90-foot barn on the farm of Charles R. Shirkey, Montpelier, Ohio.

Mr. Shirkey has given considerable attention to the use of concrete on the farm and has employed it in making many of his farm improvements. There is therefore nothing surprising in his use of concrete for this large barn just added to his farm-building group.

He saw the wisdom of protecting the animals to be housed, against fire, and constructed the floor above them of reinforced concrete carried by 12-inch I-beams.

Several preliminary designs were calculated for the floor construction before one presenting all desirable economies was worked out. This was because the I-beams had already been purchased and it was necessary to make a design that would best fit their use. Calculations were made based upon using the beams running lengthwise of the barn, and again running crossways of the barn. The latter design, as shown in the accompanying drawing, made it possible to reduce the thickness of the floor slab, and was the one finally adopted.

A number of construction difficulties were encountered, owing to the fact that the concrete mixer employed for preparing the concrete was of such limited capacity that the work could not progress with



Details of Beams and Floor Slabs (Figured for the Two Optional Ways of Running the Floor Beams) Showing Reinforcing Bars Placed Under Hay Mow.

speed enough to make floor slab joints fall at previously determined desirable points, representing each day's suspension of concreting. So joints had to be made in the floor, where it would have been more desirable to have avoided them.

Inasmuch as the superstructure was planned for plank construction, an attempt was made to avoid the expense of special form lumber, and to use so far as possible the material intended for the superstructure frame. This, of course, compelled no cutting of the stock lengths, so in some cases the forms had to be built without making close fits. To give a finished appearance to the work, the corrugated sheet steel with which the structure was to be roofed, was used as a covering for the floor forms to prevent a leakage of concrete. This worked out well, and furthermore, gave an attractive appearance to the under side of the floor, which, of course, was the ceiling of the basement, due to a reproduction of the corrugations in the steel on the concrete surface.

The slabs are reinforced with $\frac{1}{2}$ -inch square twisted rods, running lengthwise, and spaced $5\frac{1}{2}$ inches center to center, while $\frac{1}{2}$ -inch square twisted rods, spaced

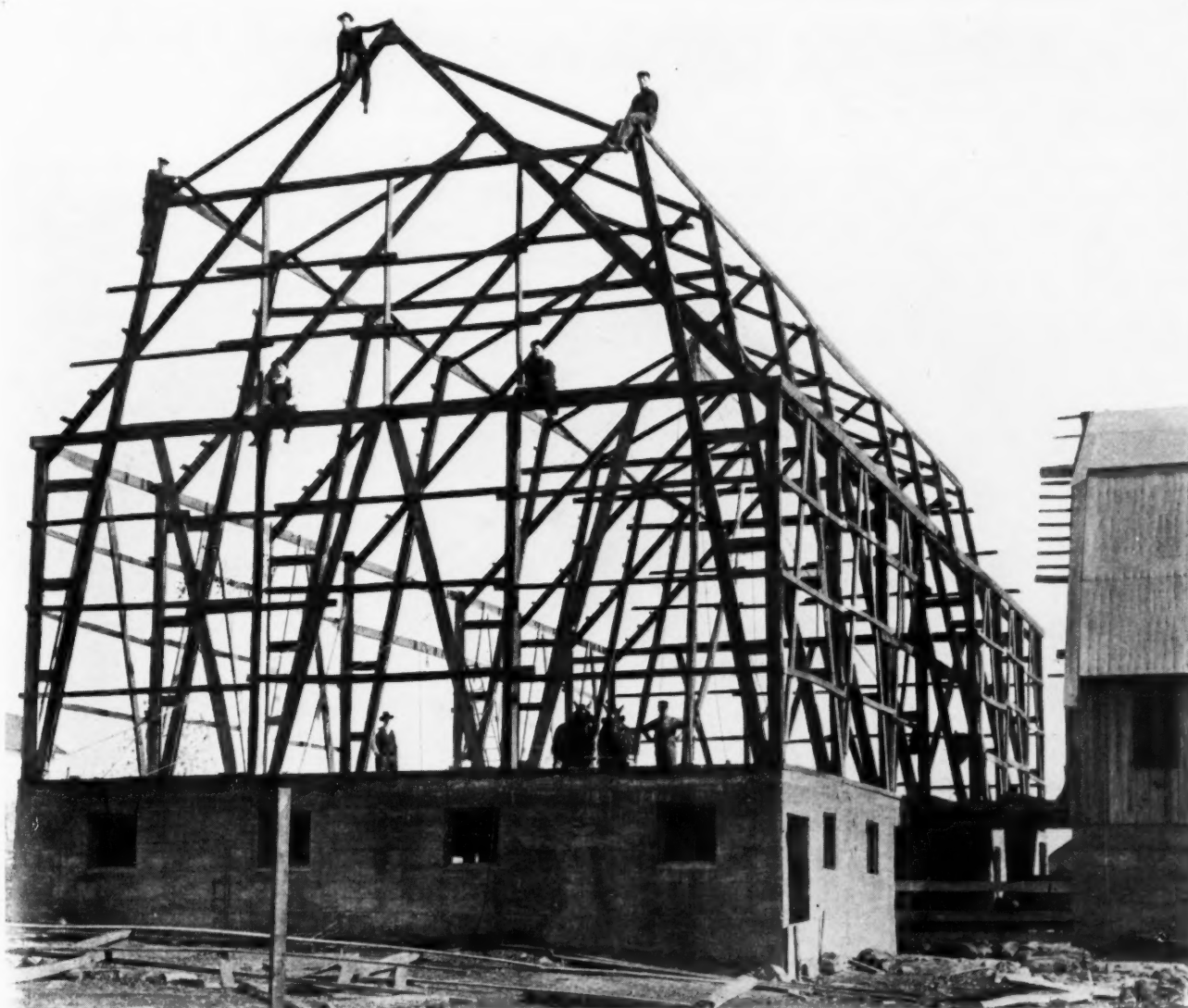
18 inches center to center, run crosswise to assist in counteracting temperature stresses.

Realizing the importance of affording every protection to concrete during the period of early hardening, the concrete as soon as hardened sufficiently to permit it, was covered with a heavy layer of wet straw and chaff, this covering being kept wet for three weeks. As a consequence the concrete hardened properly under the most favorable conditions and represents a practically perfect piece of construction.

A 1:2:4 mix was used thruout, care being given to the selection of clean materials and to accurate proportioning.

The owner contemplates finishing the basement interior in the most approved modern manner, using concrete for floors and for stalls. By so doing, the stock quarters will be given the highest possible measure of sanitation, a feature which is of importance equal to fireproofness.

Some persons still condemn the use of concrete floors in stock stalls, claiming that they are too cold for stock to lie upon, and hence may cause rheumatism and, in dairy cattle, other objectionable stock



View Showing Concrete Foundation as Carried Up for First Floor and with Timber Frame Erected.

ailments. There is room for quite a difference of opinion on this subject, yet many noted stock raisers express themselves emphatically in favor of concrete.

Where the concrete floor lies immediately on the natural soil, which may perhaps be moisture-retaining and hence will become cold in winter, concrete floors may become objectionably cold. But a concrete floor should not be laid immediately on natural soil, which



Concrete Floor as Placed Over First Floor and Under Hay Mow.

tends to retain moisture. Rather a floor base should be prepared by excavating 8 or 10 inches and substituting for the natural soil thus removed an equal depth of clean, well-compacted gravel or cinders, which will act as an insulating material, especially if connected with drains that will prevent the accumulation and retention of water beneath the concrete. For those who object strenuously, however, to using concrete for stable floors, there is the alternative of placing on top of the concrete some one of the several types of wood or cork block made especially for stable floors. Such construction, however, cannot be so sanitary as the impervious concrete, yet of course it is far better than an earth floor or even the slat stall floors which are sometimes used. The latter soon become saturated with stable wastes, and wear out and must be replaced, therefore they represent both insanitary and impermanent construction.



Pick-Ups on the Job

By H. J. Blackledge

ALWAYS buy the brightest colored pencils you can find. If you drop one in the shavings or trash it can be seen instantly, without having to get down on all fours and paw around in the dirt.

FILED to a sharp point, a broken nail set makes a dandy prick punch. Or break it off close up to the knurl, file properly (drawing the temper if it is

too hard to file), re-temper and you have a good center punch.

I SAW a fellow have a streak of bad luck and break all his drill points. He said never a word, but took a six-penny finish, hammered it to a chisel point, filed off the corners a bit and—went ahead drilling. It worked perfectly for thirty holes. If the chuck will hold nails it would also hold the bradawls from a hollow handle.

EVER have your oil stone try to navigate the whole bench? Especially when you were in a hurry? Take the stone out of the case and drive a tack or flathead thru the bottom so it will project a sixteenth, in each end, replace stone and go to it. Or, if you have a metal case, glue a piece of sandpaper to the bottom. And, by the way, old Le Page's liquid won't stick to metal very well. But if you use shellac you will find it will stick—till the pond freezes over. Remember this when you run out of cement for your bicycle tire. Shellac is the best sticker I ever found for connecting with metal.

NOT long ago the boss fired five men because they did not have tools enough. Young man, buy tools! And then again, Buy Tools! And again, I say unto you, BUY TOOLS! Never mind about the old crabs that howl "Hardware store!" Before night you will have the satisfaction of having them come around and want to borrow something from you. My partner once told one of these fellows he would not loan him a pleasant smile. You can use your own judgment. Some men would split the shingles by hand as their grand-dads did, if they could. I should say that ten out of every twelve numbers of the "A. C. & B." advertise some new tool. Father says, to most of them: "Well, that's not bad." Grand-dad says, "Humph!" through his nose. But let's have the brass tacks—

WHY spend twenty minutes chamfering the corners of a porch post to gauge lines when it can be done in five with a chamfer gauge costing two bits?

WHY plane and try with square, plane and try, plane and try—when once over with a plane gauge will make it dead sure? Ever try to joint a board with a smoother? Same principle exactly! Costs a dollar.

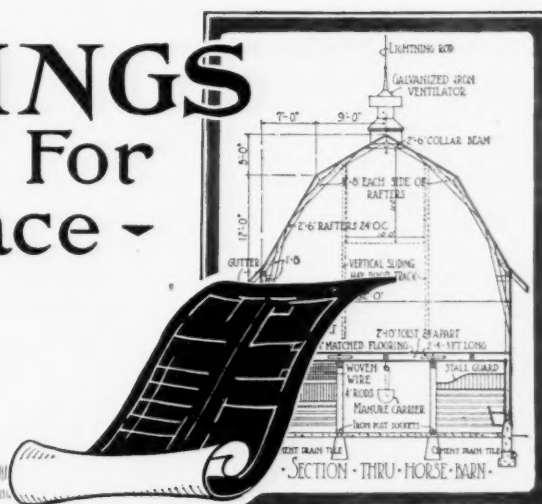
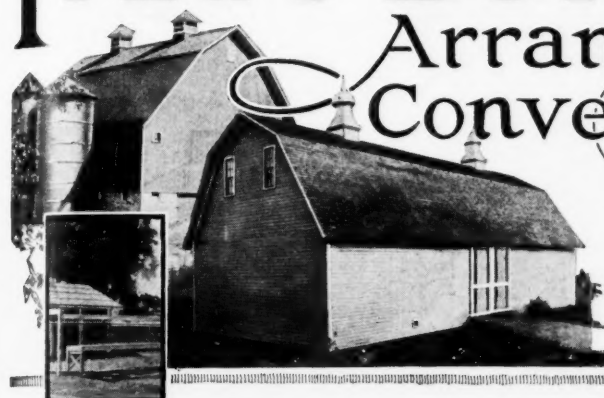
WHY bore, pull out and look; bore, pull out and look—and then seven more times, when a bit gauge would make forty holes all *exactly* the same? Costs from fifteen cents to six bits.

WHY chisel mortises by the hour when a dollar and a quarter router would do it—well, not by the minute, but 'twould save very nearly half time on a job, besides getting the mortises all of an accurate depth.

WHY drive screws by twist of the wrist when one shove will make three turns and can be done in less time than one turn? May the Lord bless the spiral ratchet!

FARM BUILDINGS

Arranged For Convenience



Large Farm Dairy House

On farms where a large number of cows are kept a separate dairy house, built after the plan shown in Design A316, is well liked.

This dairy house is thoroly well built with a concrete foundation, hollow wooden walls and a good roof. The concrete foundation is solid and extends well down below frost.

The floor of the dairy house is thicker than ordinary farm floors. Commencing at grade, the ground is leveled and wetted down with water to pack as solid as possible. A layer of cinders is then put down about three inches deep. The cinders are carefully leveled and lightly pounded with the object of making a dry, cushion foundation for the concrete.

The concrete bottom may be a coarse

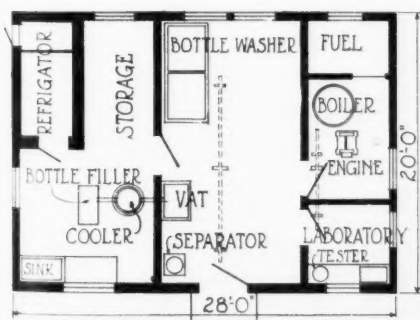
There is a ventilator window in each gable to keep a circulation of air moving over the dairy room at night. These windows are hinged and operated by cords running over pulleys.

The plan of the dairy house includes rooms for the boiler and engine, separator, cooler and refrigerator, with places for the Babcock tester, bottle washer and other small utensils and machines. The arrangement is intended for putting up high grade bottled milk and cream and perhaps to churn the surplus into butter.

A farm dairy to supply certain special lines of trade requires some provision to take care of the surplus. The flow of milk varies in the best managed dairies. If a farmer has a contract to supply a certain quantity of milk or cream daily,

he has to have a little more milk than necessary to fill the orders. The surplus may be worked into butter to better advantage than any other product, because butter may be sold in any quantity at any time. Also good farm dairy butter that is made under facilities for turning out a fancy product usually brings good prices with unlimited demand.

A dairy business handled in this way requires a larger dairy house and more machinery than when the milk is sold in bottles or the cream is shipped away and the skimmed milk fed on the farm, but there is a chance to make more ready money by following up the different lines of manufacture to get a profit from as many branches of the business as possible.



Floor Plan of Dairy House.

mixture about three and one-half inches deep. The floor surface, however, is very carefully made by using high grade sand mixed with lively cement in proportions of one part cement to two parts sand. This makes a waterproof floor with a hard, smooth wearing surface.

Above the wall the building is constructed of studding, building paper, with clapboards or drop siding outside, and the inside is finished with good quality of narrow matched ceiling. The sides and overhead are built in the same way.

The roof also is made double by boarding the rafters on the underside to keep the attic part of the building cool.



An efficient farm dairy house to handle bottle milk business. We can furnish complete set of blueprinted working plans and typewritten specifications for only \$7.00 per set. When ordering, ask for Design No. A316.

One Story Tile Stable for Cows and Horses

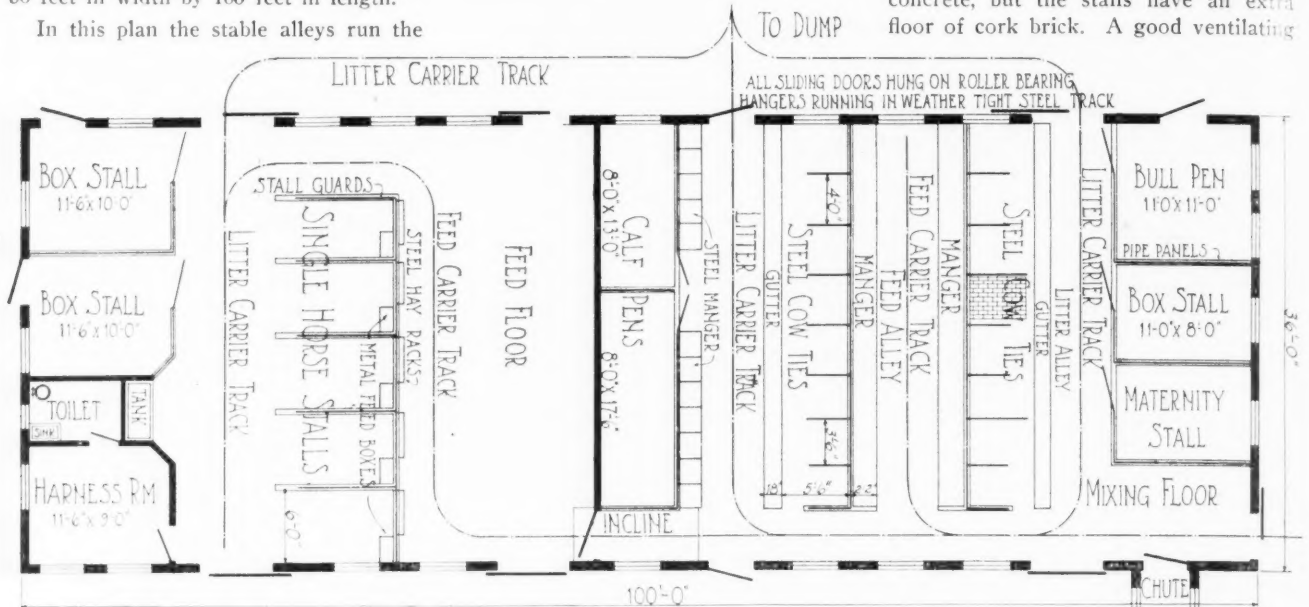
Some dairymen prefer a stable without storage overhead. The accompanying illustrations of Design A283 show a thoroly well built dairy and horse stable 36 feet in width by 100 feet in length.

In this plan the stable alleys run the

hay, etc., 15 feet in width.

The manure and feed carriers run crosswise back and forth, as indicated by the dotted line on the floor plan. The building is constructed of hollow structural tiling up to the eaves. A silo 12

feet in diameter and 30 feet high is built of silo tiles. The roof may be covered with asbestos shingles. There is a drop of 3 feet about the center of the stable, because of the in-



Ground Floor Plan of Stable Measuring 100 Ft. by 35 Ft. and Built of Structural Tile. Design No. A283

short way of the building. Box stalls for the cattle are in one end of the building and the horse stable is in the opposite end. There is a feed alley between the two stables for the storage of baled

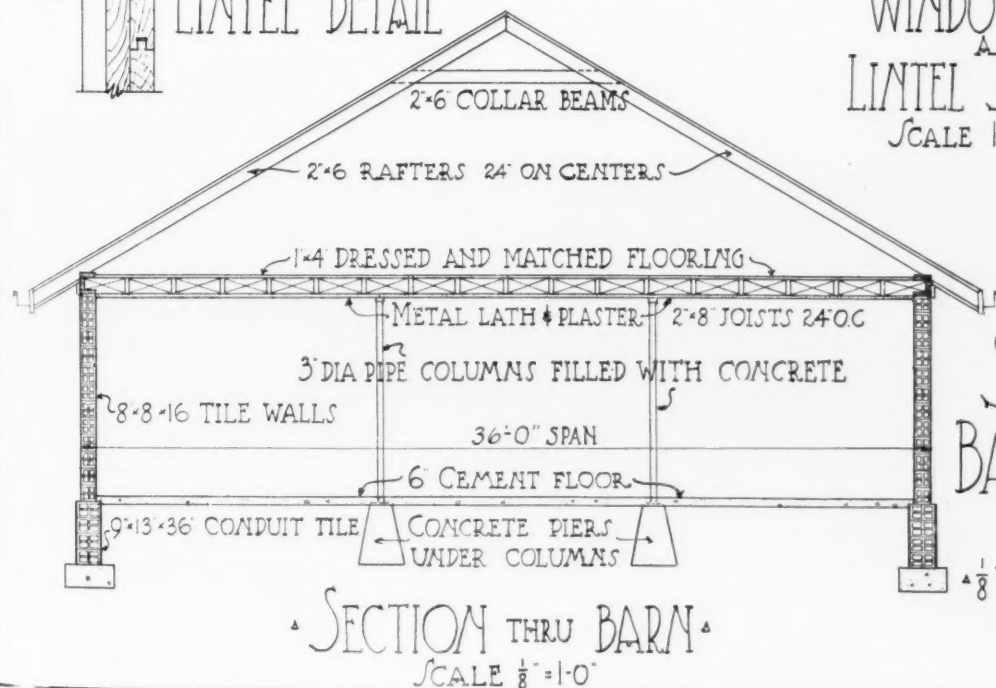
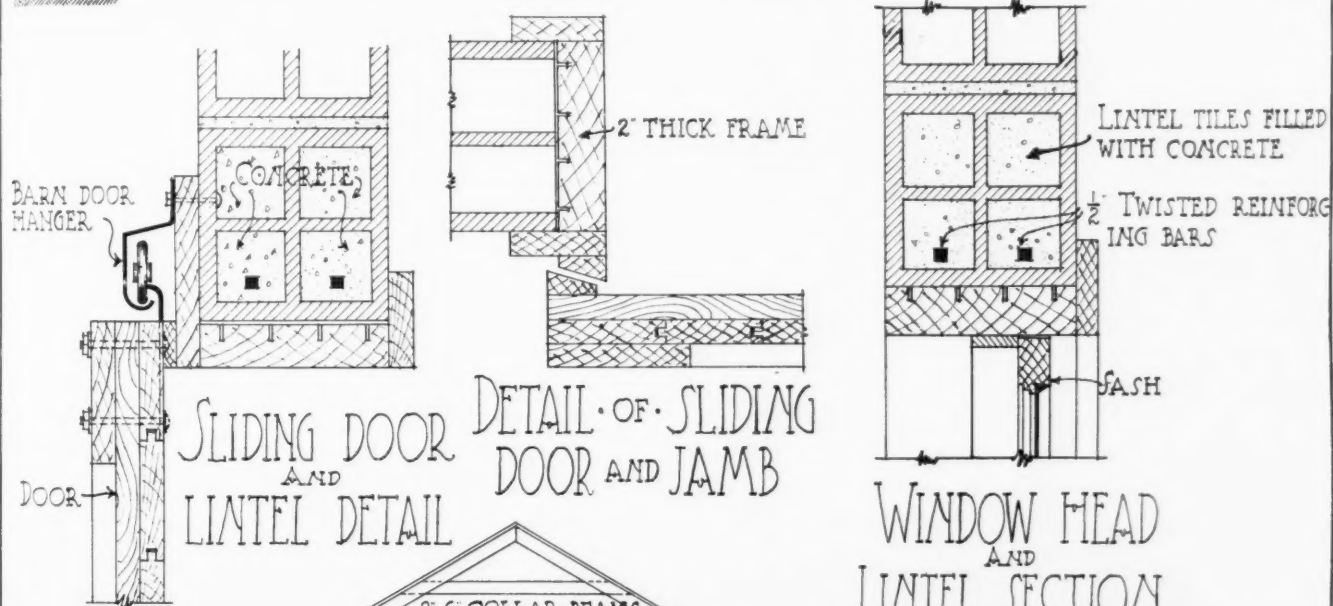
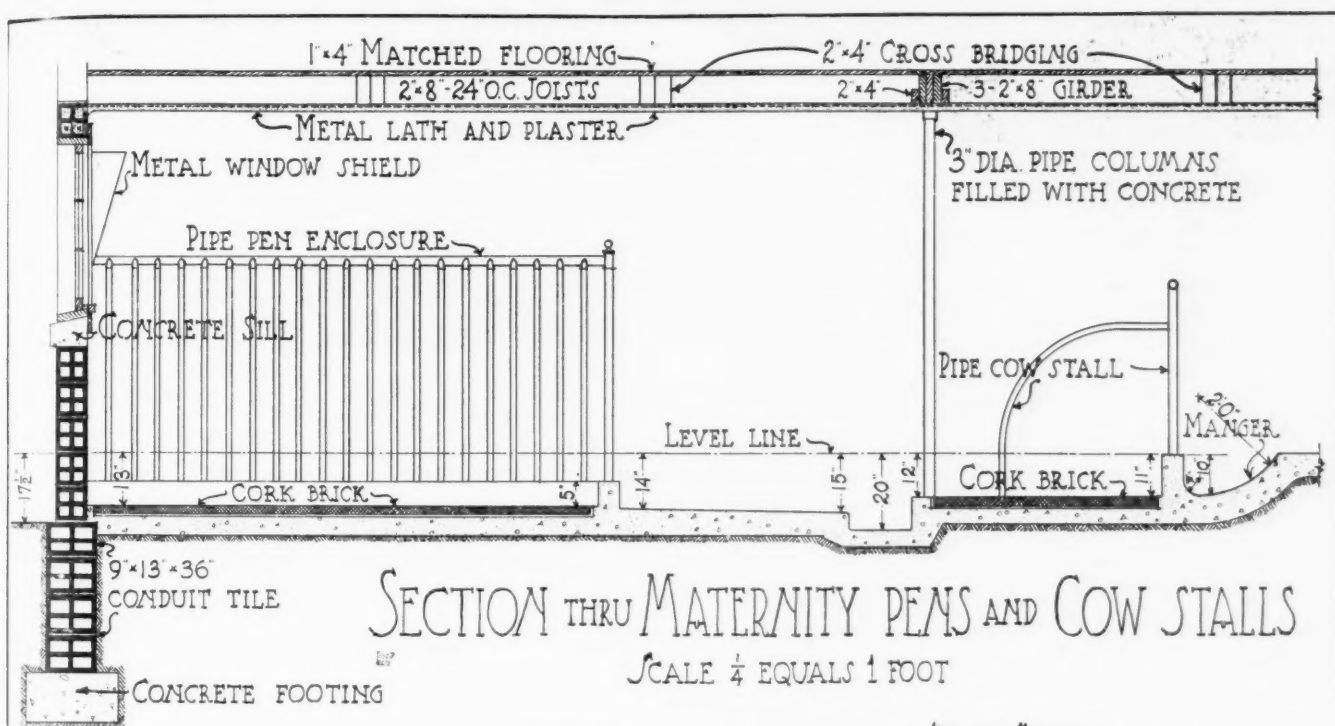
feet in diameter and 30 feet high is built of silo tiles. The roof may be covered with asbestos shingles.

There is a drop of 3 feet about the center of the stable, because of the in-

system is provided, fresh air brought thru windows, foul discharged thru flues



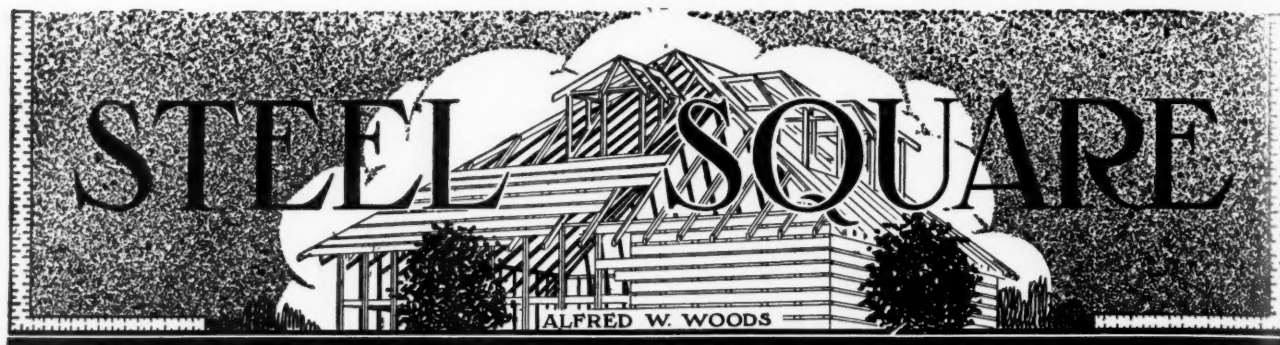
Hollow tile one-story stable for beef cattle and horses. Size, 100 by 36 feet. We can furnish complete set of blueprinted working plans and typewritten specifications for only \$10.00 per set. When ordering, ask for Design No. A283.



SHEET OF
BARN DETAILS

• SCALES •

• $\frac{1}{8}$ " • $\frac{1}{4}$ " • $\frac{1}{2}$ " EQUALS •
• ONE FOOT •



Possibilities of the Steel Square

A TALK TO THE BOYS, WITH ILLUSTRATIONS SHOWING THE NEAR A-KIN OF RAFTER FRAMING TO THE LAYING OUT OF STAIR CARRIERS WITH THE AID OF THE STEEL SQUARE

By A. W. Woods

WE are going to talk to the boys this time and will ask the older chaps to stand aside for the time being till we get thru with our say, for they might come back at us and say: "We know better, for we have been there." But anyway, we want to talk to the boys and we want to have their undivided attention. So here goes.

Did you ever stop to think how near a-kin stair building, or rather the laying out of the stair horses, is to rafter framing?

We say horses, because that seems to be the name they generally go by, but we never could see why, unless they be compared to the beast of burden in carrying weight. If so, why not call them carriers, for that is what they are; they not only carry their own weight, but they are subjected to besides, both live and dead load. So, hereafter, we will refer to them as carriers.

In the first illustration is shown a carrier in position. It is formed from a 2 by 10-inch or 2 by 12-inch joist, according to strength required. The runs and risers are shown laid out on same ready to cut out, and if we consider them to be 12 and 7, as shown by the square, it would be just the same as running the square for finding the length and cuts of the common rafter and when set up in place, it would show the same as the common rafter, only that it is cut out of heavier stuff.

The second illustration shows a rafter of same run and rise as in the first instance; and the steel square is applied the same number of times and in the same proportions to determine its length as in the former illustration,

But you say, the tread of stairs is not always 12 inches, which is true, yet the principle remains the same. The only difference is, the square is made to fit the occasion. The run and rise in either case must be known factors before the runs and risers can be laid out, or the length of the rafter determined.

In the case of the carriers, the respective treads and risers must be of equal parts, that is, the total rise should be divided into parts as desired for the rise

of each step; and in doing this, it is rarely ever that these parts result without fractions and oftentimes they run into very minute parts, so much so that the stair builder discards the steel square because the fractional divisions are not to be found stamped on its face, and so he proceeds to lay out what is generally called a pitch board, which is nothing more nor less than a right angled triangle cut from a thin board with base and altitude equaling the desired width and rise of the

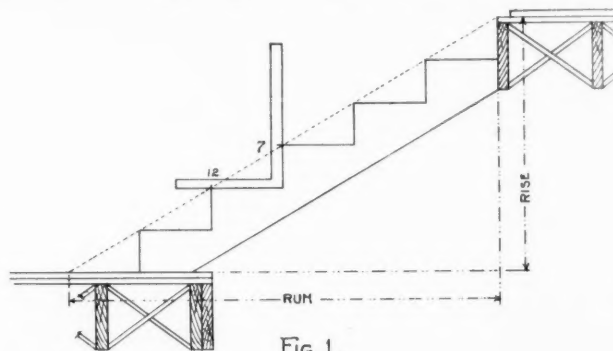


FIG. 1.

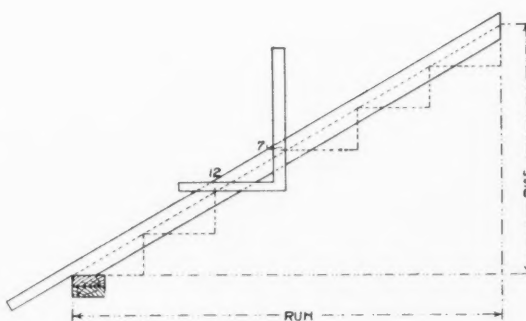


FIG. 2.

Steel Square for Laying Out Stair Horses.

step, as found in a mathematical way or by other means. Most stair builders use a pole by cutting it the exact length of the rise (from floor to floor) and then with spacers, divide the pole into the number of risers as desired. This being done, another pole is used to find the width of the individual treads. This is not so exacting as in the case of the rise.

We once heard of a fellow building a stair. He got

along nicely (in his estimation) till he got up to the last tread, and then he concluded to ask the boss for information and so he called to the boss: "Do you want two little steps up here, or one long one?" It is safe to say that the boss did not want either, or his services any longer. So to make it more emphatic, we will change the word "should" to "must" be equal. But as we said before, in the total run of the carriers, this is not so exacting, since a little one way or the other does not usually matter, unless it comes between fixed points.

In framing the rafters, it is the general custom to take so many inches rise per foot run of the rafter, as 7, 8, 9, 10, etc., as there is no need of running into fractions unless it be where different pitches are used in the same roof, and even this, as a general rule, should be avoided, as it usually shows bad taste; but fractions in the run of the rafter is a common thing; in fact, more common than otherwise, but this is an easy matter and should not be allowed to bother at all, as the length of the rafter will be taken care of by the manipulation of the square at the last placing, by laying off the seat instead of the plumb line and then by sliding the square along this line either to the left or right, for addition or subtraction, the amount of the fraction, whatever it may be, and lay off the plumb line for the proper cut.

In the case of the carrier, the treads are usually made $9\frac{1}{2}$ to $10\frac{1}{2}$ inches and the square is handled in the same way as for finding the length and cuts for

the common rafter. In other words, if one understands the framing of rafters by the running or placing of the square, he should experience no trouble in laying out the stair carriers, or vice versa, and yet it is generally considered that they are wholly different branches of carpentry work. In saying this, we do not wish to be understood as having reference to stair building in all of its art, but simply to the framing of the carriers.

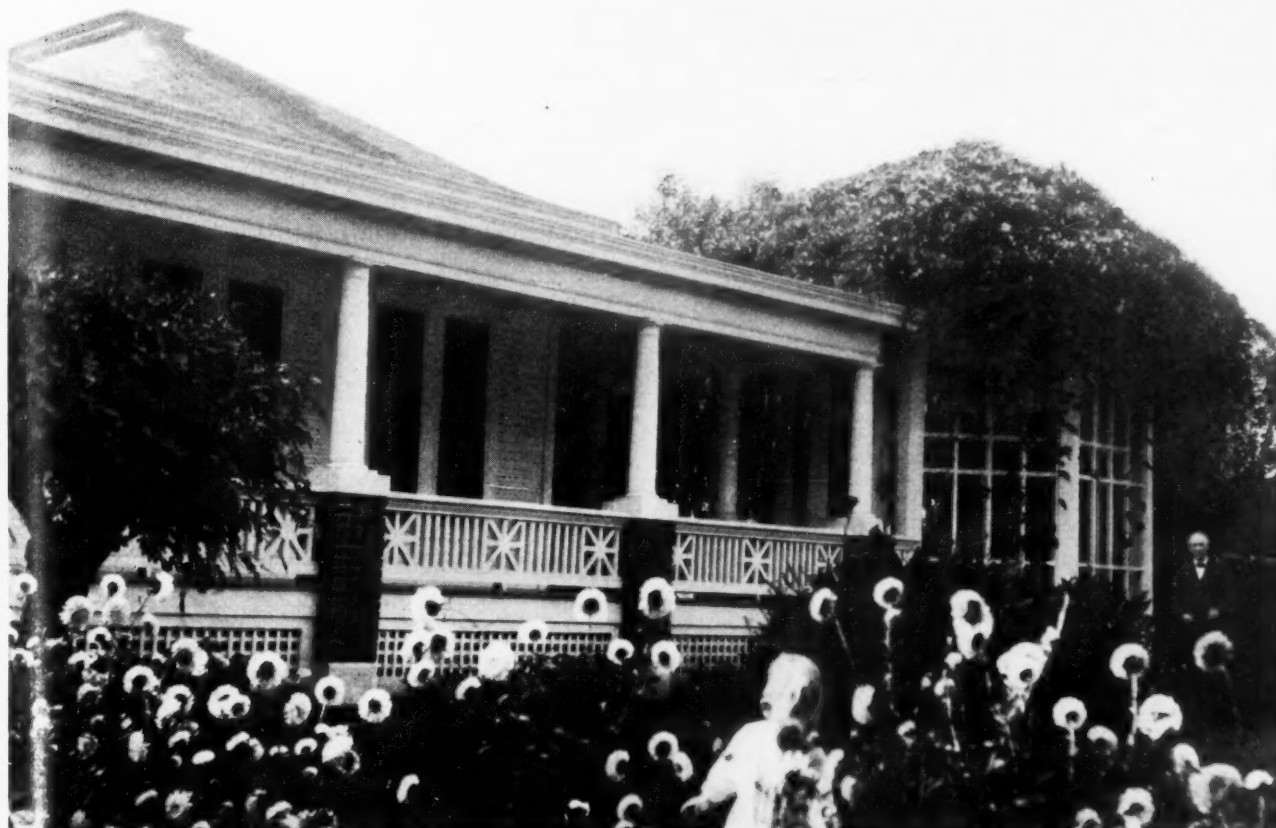


From January to October

THE accompanying half-tone photo shows part of the residence of Mr. A. W. Woods, our Associate Editor and Steel Square Expert. This is the octagon summer house which was shown in our January, 1915, number.

The photograph was taken late in September and shows the wonderful growth of the grape vine which completely covers the whole top of the summer house and hangs in festoons nearly to the ground. Just in front of the summer house is a bed of magnificent cannas, some idea of the height of which may be obtained by comparing with Mr. Woods' picture standing just to the right.

In the foreground and alongside of the walk is a bed of asters in full bloom and of many colors, but Mr. Woods says only the lighter colored ones show up prominently in the picture. In their midst is shown Thomas Vance, Jr., who is admiring his grandpa's flowers.



A. W. Woods and His Octagon Summer House, Construction of which was Illustrated in the January, 1915, Builder.

TRICKS *of the* CARPENTRY SHOP

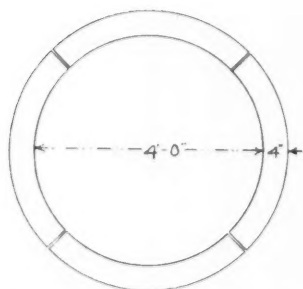
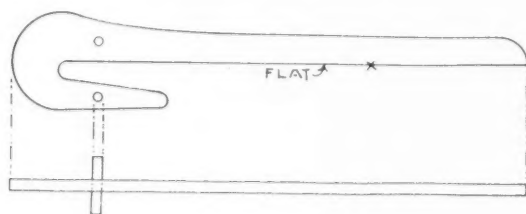


Kinks and Tricks

By Wm. C. Jasbury

A RADIAL GAUGE—I have in mind a carpenter's, or rather a woodworker's radial gauge, or in other words, an instrument to give the joint cut of a circle. To build a ring, say a well circle 40 inches in diameter, out of 1-inch material, with a 4-inch rim, take four parts, or quarter circles. Suppose the board was extra wide and a longer piece were sawed out, in fact, various lengths. When the man who was to put them together got at it, he would have to guess at the end cuts, or lay them out with the aid of a radius rod, or use a Kawalle miter box, or use the little tool I am about to describe.

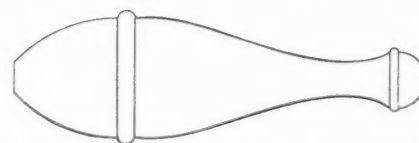
It is a piece of hardwood $\frac{3}{8}$ or $\frac{1}{4}$ inch thick, $3\frac{1}{2}$ inches wide and about 10 inches long, cut as in illus-



Home-Made Gauge to Give the Joint Cut of a Circle.

tration. With the aid of a pair of $\frac{1}{4}$ -inch dowels, 1 inch long, the tool is done. Keep the dowels up against the circle and mark along the edge, X, which is 90 degrees with the center line of the two dowels. The line, X, always points toward the center of the circle. I hope this is clear, as I consider it a good idea.

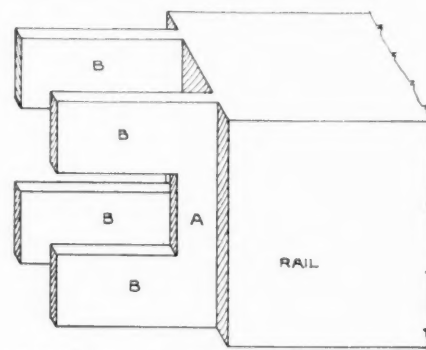
HUSHERS FOR BOWLING ALLEY PINS—Speaking about wood turning. I have turned the grooves in bowling alley pins for rubber bands that when the pins are knocked down, they will not make so much noise. Some of the pins are banded



Bowling Pins Banded with Rubber to Cut Down Noise.

at top and belly, some at the belly only. You see everything has its enemies. Even the bowling alley man is made to put mufflers on his pins in order to reduce insomnia in nearby hotels to a minimum.

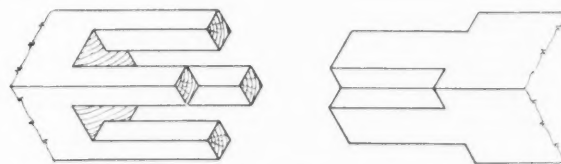
SOME MORE JOINTS—Many times tenons



Double Tenons on Rail Make Less Mortising on Stile.

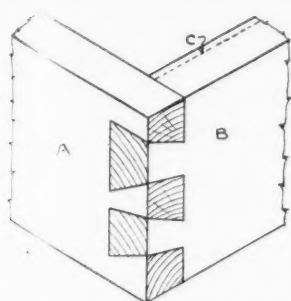
have been worked on rails (double) so as not to weaken the stile in mortising too much, making the tenons side by side, as shown in illustration. Open space, A, being called "relish," and B, "tenon."

I saw a cabinet maker working a joint for a piece of fancy turned work, of black walnut and white maple glued together, then turned. Here is the joint before turning.



Joint Made Between Black Walnut and White Maple Before Turning.

Here is one that puzzled yours truly. A shop-mate handed me a double dovetailed corner; asked me how I would make a couple bushels of them. I deferred my answer for reasons known to him *not*. The dovetails are cut in the regular manner except the dovetails on the end of A are cut similar to B. The joint cannot be put together the regular way. The way it was made was to hollow out the inside of piece B at the joint, force the joints together in an acute angle, bringing the angle around to square or 90 degrees, then glue in a piece of veneer (paper thickness) at



Ingenious Double Dovetailed Corner.

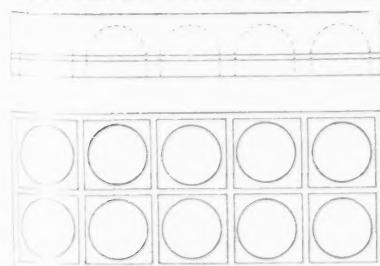
C, covering up the open cuts at angle. The veneer, C, to be ripped off the inside face of B before the operation. This joint, to my mind, is impracticable as far as its construction is concerned. This only shows what can be done with wood, tools and man, all working in unison.

AN OLD-TIME BARN—Recently I visited a farm in New Jersey and while in the barn I was much interested in the manner of construction. The woman on the premises informed me that the barn was built in 1793. Think of a wooden building standing 122 years, still in good condition and still being used. Of course, we have all seen buildings older, but I am talking about this one. The frame, as I examined it, proved to be white oak, cut on, or near the premises, as the neighborhood seemed even at this time to be well stocked with this valuable wood. The beams were 12 and 24-inch and 28 feet long and, of course, hewed out by hand. The posts were 8 by 12, braces 8 by 8, all mortised and tenoned together and draw-pinned. The formations of the beams, braces, etc., were no doubt planned out by some master framer of that day. The same sized building of today would be constructed in some localities of steel beams, etc. No doubt when raising day arrived, there was a crowd, and as the custom used to be, when the raising bee was over, there was a jollification that bore no resemblance whatever to a local option affair. New Jersey being the home of Apple Jack, no doubt that beverage had Grape Juice hanging on the ropes.

As I stated before, the joints of this barn were draw-pinned, meaning when the mortise and tenon are fit together, a hard wood pin is driven thru the hole in the tenon, bored a bit out of the center with the hole thru the walls of the mortise, i. e., closer to the shoulder of the tenon, so that when the pin is driven in (which has a sharp point) it pulls the tenon on in the mortise, so that the shoulder comes up tight.

To spend some time in a barn constructed of such timber, not only appears odd from a mechanical angle, but touches a sentimental chord as well. Days and weeks were used to do this work, with tools that today would seem primitive.

A FANCY NAIL BOX—I know where there is a nail bench box made up of cups turned out and put in a flat frame. Each cup or hollow block contains different kind of nails. The owner claims more uses and offers more praise for it than is due the linotype machine.



Court Decisions Affecting Builders

By L. R. W. Allison

Construction of Buildings on Residential Streets

Supreme Court Justice Charles W. Parker, New Jersey, has recently rendered a decision of far-reaching importance pertaining to building construction on residential streets. This decision is particularly applied to a city law adopted by the Board of Commissioners of Jersey City, and sets aside such law as a restrictive measure of prohibitive character.

This law, arranged to cover the protection of property on residential streets, provided that no building of any kind could be built, erected or moved upon any land in the city so as to be in front of any private dwelling, or in any way to cut off the frontage of such dwelling, unless a special permit was obtained. Also, that no change from a residential structure to a place of business could be made without permission from the building department.

In holding this law as not legal, the Court states that a city in restricting building operations by adopted laws can only restrict the operations with a view to the preservation of life and health and in the interests of safety. In the case considered, it is clearly shown that the adopted law exceeds the limits of the power of the State, as neither safety nor health are involved.

Going further into discussion, the Court says that it would be in some respects highly beneficial if a residential section could be lawfully protected by action of the city authorities to prevent the establishment of unsightly building extensions so as to break up the building line of a handsome street. The Jersey City law, however, is not practical for this purpose and the objections raised by neighboring residents were mainly from the standpoint of obstruction of view.

Contract on Conditional Bid Not Legal

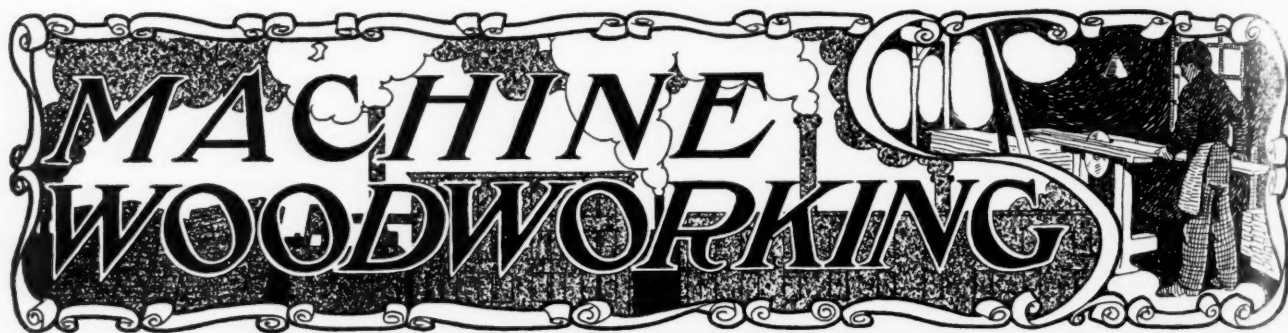
The State Supreme Court, New Jersey, has handed down an important decision canceling a contract award made upon a bid which carried conditional features of acceptance. The Court says that a proposal with any conditional provisions is really no bid at all, but an offer based upon a matter of choice. This decision affects a very common form of building proposal and puts a clearly defined legal view upon bids of the conditional class.

In the particular case brought before the Court, the contract award for a new school building at North Bergen was considered. The local Board of Education recently advertised for bids for the erection of this structure, the specifications including ten separate items, among which the concrete and masonry work were listed as individual features of bidding.

The successful bidder, in the judgment of the school board, entered bids for two items of \$9,500 and \$56,880, in order mentioned, or a total of \$66,380; the bid included a stipulation that the first figure for concrete work was conditional on obtaining the contract for both items, and if the contract for both items was not awarded, the sum of \$1,000 should be added to the bid for concrete work, making a total of \$10,500 for this item. The next bidder submitted a proposal of \$55,913.77 for masonry work and no bid for concrete construction. The sum of this bid and the separate bid for concrete (\$10,500) totaled \$66,413.77, or more than the entire proposal of the first bidder. Accordingly, the board awarded the contract to the contractor submitting the conditional bid.

In the Court's decision it is set forth that the successful bid by this action of the school board was not, in truth, the low bidder, and that this bid, not being legal, makes necessary the cancellation of the contract award.

Newark, N. J.



How to Build a Roll-Top Desk

A USEFUL AND INTERESTING PIECE OF WORK FOR THE POWER CABINET SHOP

By Hugh H. Chambers

Power Shop Craftsman, Mahonington, Pa.

IT is essential that the wood used in making a piece of furniture be put in the best possible condition for painting, because if it is not an unsatisfactory job is sure to result. No matter how careful one may be in the fitting and putting together or how beautiful the growth may be, if the cleaning or dressing is not thoroughly done disappointment will be the result.

The wood should be gone over carefully with a smoothing plane, then a cabinet scraper, next No. 1½ sand-paper, and finally with No. 0. This should all be done before any part of the building of the piece is begun except, in making the desk, the parts that are glued together should be planed off after they are put together in order to smooth off any joints that may not be even.

The desk herein described is made of oak and while of an imposing appearance can be made by any man possessing an ordinary kit of carpenter tools. The first thing to do is to cut the pieces for the top and the writing bed one inch longer than the finished desk, in this case 63 inches. This is to allow for the final dressing. The 14-inch piece on the extreme top is made of two 7-inch boards jointed to a perfect fit. Three dowel pins are put in an equal distance apart, then glue it up and let it stand in the clamps for 24 hours. The part just above the drawers is 26 inches wide; to make it, proceed as above. These should be made first and laid inside so that the glue will be dry when they are needed.



Serviceable Roll-Top Desk Made in Author's Shop at Mahonington, Pa.

Next make the lower section; this is made by first cutting four pieces $\frac{7}{8} \times 1\frac{1}{2} \times 30$ inches and seven pieces of the same material 12 inches long. This is nailed, as shown on the detail, between the 30-inch pieces between the drawers on one side and between the door and drawer on the other side also at the top and bottom of each section.

Next the end sections are made by first cutting two pieces of 1×10 19 inches long, and three pieces of $\frac{1}{2} \times 4$ 30 inches long. Lay the two pieces of 1×10 upon the bench $3\frac{1}{2}$ inches apart and nail the piece of $\frac{1}{2} \times 4$ upon the 1×10 allowing $\frac{1}{4}$ of an inch lap upon the 1×10 . Then put a piece of $\frac{1}{2} \times 4$ upon each side, allowing them $\frac{1}{4}$ -inch lap. The other end is made the same way.

Now take the top and mark 30 inches each way from the center and mark square each end upon what will be the under side when finished. Now measure in $14\frac{5}{8}$ inches from the marks, and square across and fasten on a piece of soft wood $\frac{7}{8} \times 2$ to nail the $\frac{3}{4}$ oak flooring or ceiling to. After this is done, set up the end section and nail down through the top into it. After this is put on each end square them up and brace them temporarily putting the brace upon the back. Then put the front section on, nailing it into the side section also through the top.

Now the short pieces marked A A A can be cut and nailed into place keeping the lower ones up from the bottom $4\frac{1}{2}$ inches. Now the back can be lined up with $\frac{3}{8}$ y. p. ceiling or $\frac{3}{8}$ flooring. The yellow pine is much cheaper than the oak and can be stained and filled so that it will match the oak nicely. After the back is lined, nail a piece of soft wood across the bottom plumb down from the one that is nailed on the top. Now the inside can be lined; after the lining is put on, the base, marked B, can be put on. This is made of 1×5 beveled off to a 45-degree angle on top. If the back is paneled and finished this can be run as far as the back comes and a mitre cut on it there. If the back is not to be finished, it can be cut off square. Where the desk is to be used for home use or set up against the wall it is immaterial whether it is finished with panel work or not; if not paneled it should be closed with $\frac{3}{8}$ ceiling.

Next, the drawer slides can be put in. These are made as shown on detail. Now we are ready for the top. First take a piece of $1\frac{1}{8} \times 10$ and saw two pieces as shown on detail marked C, after this is done rip them in two. This will make four pieces $\frac{1}{2}$ -inch thick. Now take two of them and saw them as shown at D to make a track for the top to run in. When these are put in place they should be kept $\frac{7}{8}$ of an inch apart. The top section is now made by gluing and dowseling three pieces of 1×10 together, then putting on the piece marked C and cutting off to the edge of this, then the $\frac{1}{2} \times 4$ is put on as shown on the detail. Around the circular places mould should be worked out by hand or

on a shaper to fit. It can be kerfed, but does not make a first class job. After these end sections are made they are put on; then the back is put in of two pieces of 1 x 8 oak cut 55 inches long. The roller for the top is now put in; this is a round piece 3 inches in diameter and 55 inches long; two hard wood pins are put in the ends of this to turn in the bearings which are also made of hardwood 2 inches wide, 4 inches long, and 1/2-inch thick, with depression in top for roller.

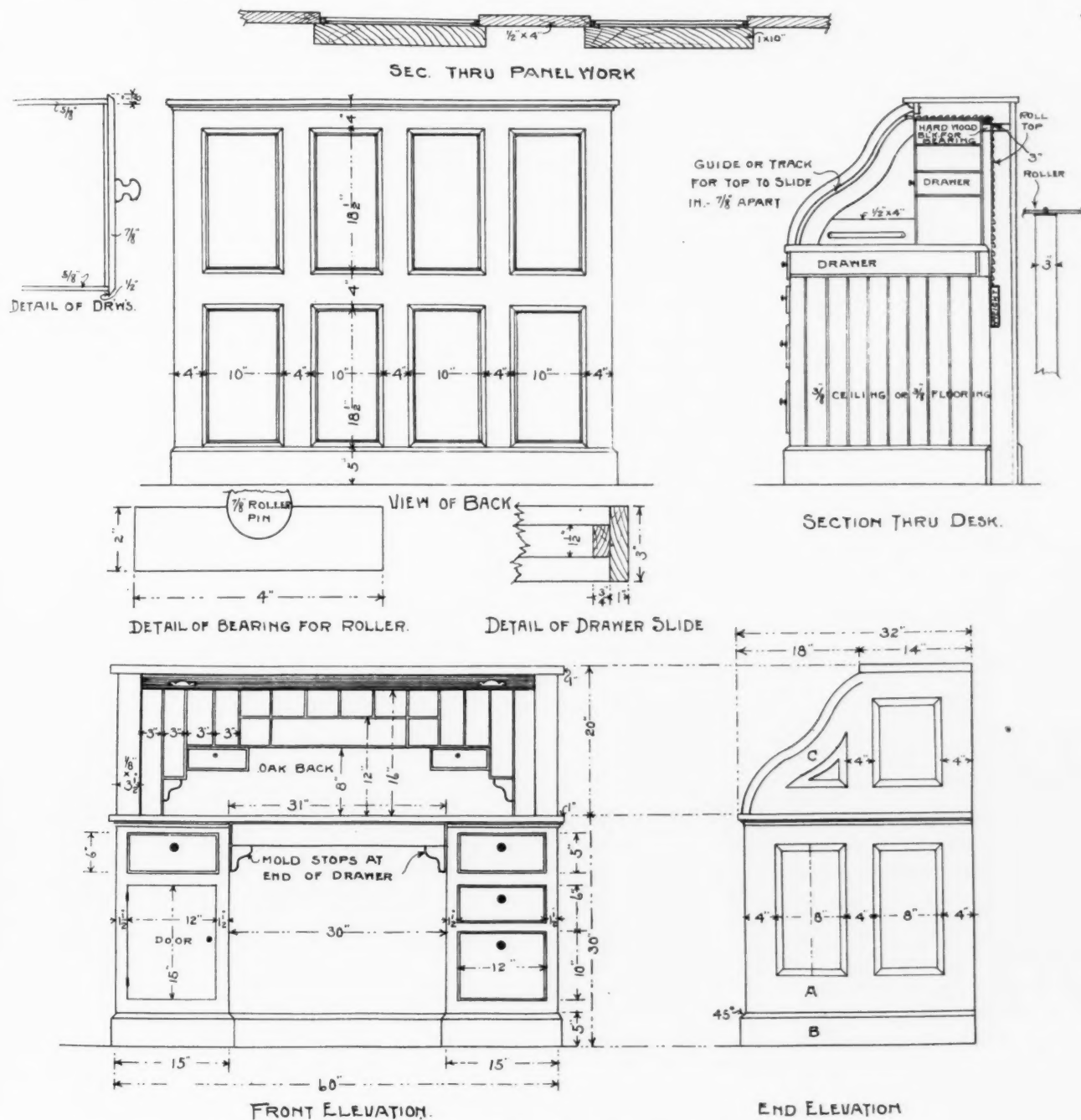
Then the top is put on and nailed down through into the end sections; after this is done the pigeon holes are made and set in as shown on the detail. After this is done two pieces of 3/8 x 3 1/2 are glued in place on the end sections as shown on the detail; these cover the ends of the pieces used in the end sections and give it a finished appearance.

For the roll-top take a piece of heavy canvas and on one edge glue and tack well a piece of 7/8 x 2 5/4 inches long. Then glue and tack the 7/8 x 1/2-inch strips on it, keeping them 1/8 of an inch apart, after this is made it should be

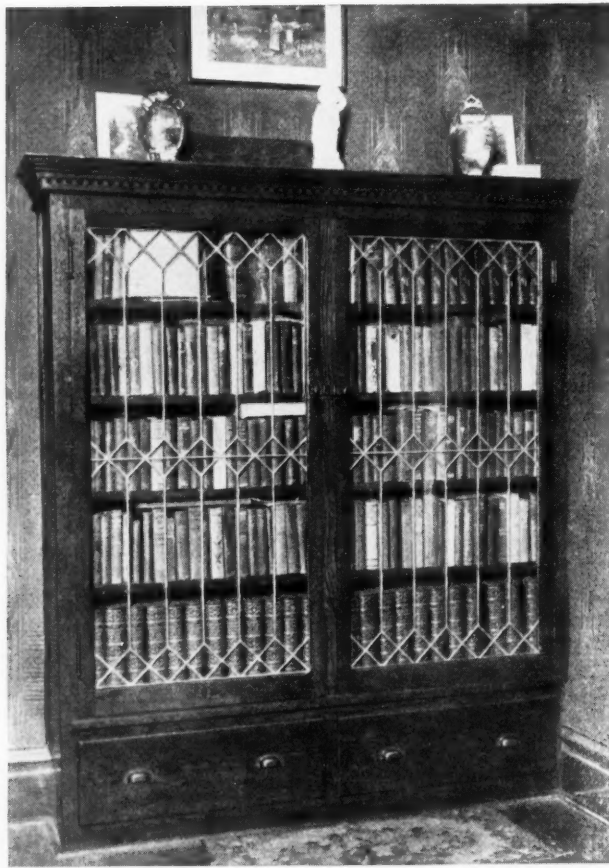
weighed and two weights, each one one-half the weight of the top should be attached to the back edge. The top is now slid through over roller from the back towards the front, and after it is in the handles are put on. These are made by turning out a piece one-half of which is shown on the detail and ripping it in two to make the two handles. The drawers are now made as shown on the detail. The heads are 7/8 oak and the rest are white pine 5/8 inch thick.

The door is made of oak, the slide stiles are 1 1/2 x 1 1/8 and the bottom rail 2 1/2 x 1 1/8, the top and bottom rail are mortised into the side stiles, before putting together the rails and stiles are plowed 1/4 inch deep and 1/4 inch deep for the panel which is put in before it is glued up. The brackets under center drawer are made of 7/8 oak, as shown on detail; the ones above are of 5/8 material.

In the desk I made for my own use the drawer on the left hand side is divided into four compartments and is used for valuable papers such as insurance policies, etc.; it is also fitted with lock.



Dimensioned Working Drawings of Roll-Top Desk Illustrated on Opposite Page.



Neat Book Case, with Leaded Glass Doors, Made by the Author.

The compartment below it, with door on it, is used for catalogs. The large drawer in the center is used for drawing paper, sketches, etc. All the drawers except this one are fitted with wood knobs. The two small drawers above are used for stamps and stationary.

In building this desk a better job can be had by raising a small shaving for each nail, and after driving the nail gluing the shaving down again. However, good results can be had by using putty if care is taken in coloring it to match the color of the wood. In using the paste filler it is put on, allowed to stand a short time and rubbed off, the

varnish should be put on for at least twenty-four hours after it has been filled and should be allowed to stand for at least thirty-six hours between coats.

Below is list of material and cost:

32 ft. $\frac{1}{2}$ x 4.	
18 ft. 1 x 4.	
35 ft. 1 x 10.	OAK.
30 ft. $1\frac{1}{8}$ x 10.	
32 ft. panel mould.	
36 pieces $\frac{7}{8}$ x $\frac{1}{2}$ 54 inches long, to make the roll top.	
1 piece, $\frac{1}{4}$ -inch thick, 13 inches wide, 18 inches long, for door panel.	
16 ft. 1 x $1\frac{1}{2}$.	
20 ft. $\frac{3}{8}$ y. p. ceiling.	
36 ft. $\frac{5}{8}$ w. p. for drawers and pigeon holes.	
If back is not paneled deduct 11 ft. of 1 x 10 and add 30 ft. $\frac{3}{8}$ y. p. ceiling.	\$12.00
Hardware and paint:	
1 lb. dark oak filler.	
1 pt. varnish.	
$1\frac{1}{2}$ lbs. 8d. finish nails.	
1 lb. $\frac{7}{8}$ brads.	
1 pr. $2\frac{1}{2}$ x $2\frac{1}{2}$ brass hinges.	
1 drawer lock.	
1 pt. liquid glue.	
$1\frac{3}{4}$ yards of heavy canvas.	3.00

Total cost\$15.00

If back is not paneled, deduct from above price.....\$ 1.35

In regard to securing work I have never yet found it necessary to go out and solicit. I depend wholly on courteous treatment, work well done, and a reasonable price to keep the shop supplied with work. Must say it has never been idle very long. During the winter months, when there is not much of a demand for furniture, I utilize the time for getting out stock for swings, screen doors and window screens, then when an order comes in for such things it is a small matter to cut to size and put together. In this way a lot of time is saved, for it is almost certain that there will be a demand for window screens and screen doors in the early part of the summer, and they all want them in a hurry.

In this business as well as in many others the credit system is a bugbear; however, this is partially done away with by allowing a 5 per cent discount for cash. The loss so far has been very small, never over 5 per cent of value of work turned out.

Cost Reducing Dry Kilns Built of Hollow Tile

By Edwin G. Zorn

THE far West as a lumber producing center is familiar to nearly every user of that material. Washington and Oregon, particularly, furnish a large portion of the annual lumber production in the United States; and so the cutting and drying of green timber is an important industry in those states. It naturally follows that the construction and operation of dry kilns has furnished a subject for considerable study and experiment in this region, the results of which are of more than passing interest to the man who works in wood.

Various kiln designs built of different kinds of material have been tried with varying success, but the most striking results have been obtained with the hollow tile kiln, the number of which is rapidly grow-

ing in the Northwest.

The accompanying illustration shows a typical north coast dry kiln built for the Mineral Lake Lumber Co., at Mineral, Wash. Its walls are constructed of hollow clay building tile eight inches in thickness with 12 inch pilasters, and laid on a concrete foundation. This is the third installation of this type of kiln made by this company and in each case experience has proven this construction to be entirely satisfactory.

In dry kilns as usually constructed there is a large amount of heat wasted due to poor design and loose construction of walls. But the escaping heat is not the only loss suffered in the use of poorly built kilns. The very fact that the heat in the kiln is constantly passing through its walls means an uneven temperature



Hollow Tile Dry Kiln of the Mineral Lake Lumber Co., Mineral, Wash.

on the inside, which in turn, results in checked lumber and a longer drying period, owing to the operator's inability to get the maximum good out of the heat available.

In a kiln the walls of which are built of hollow tile, the insulating air spaces in the tile act as a barrier to the passage of heat through its walls by radiation, thus producing an even temperature on the inside with a minimum expenditure of heat. It has been found that lumber dries very quickly in a kiln of this type with the smallest amount of checking.

Not only does hollow tile make a money-saving dry kiln construction but it also gives a fireproof structure, an advantage not to be undervalued in a lumber yard. That this feature is worthy of consideration was demonstrated a few years ago at the yards of the Baker White Pine Lumber Co. at Baker, Ore. This company has a kiln built of hollow tile and located in the southeast corner of its dry sheds which cover three and one-half acres of ground and in which were piled at the time in question a million and a half feet of select lumber. A fire started in this lumber with the wind blowing from the north and almost directly over the kiln. Although the flames completely enveloped this structure, it suffered no damage beyond two warped blocks and a badly scorched roof, which was covered with a patent roofing. Meanwhile on the inside of the kiln, the thermometer registered 192 degrees and no damage whatever was suffered by the lumber which was drying there.

So successful has been the use of hollow tile in the construction of dry kilns in the Northwest, that the insurance companies of Washington now allow a base rate on these structures when built of this material, the lowest rate being allowed on eight-inch tile walls with pilasters, or on thirteen-inch solid walls.



Off Days

EVERY person who has the natural powers of observation has before now had what is called "Blue Monday" or "off day" or "Black Friday," etc. This is not a myth; neither is it the result of reverse imagi-

nation; it is a cold, well-founded fact. Some days everything a fellow does seems to bring rosy results; other days will have the reverse jammed down so tight the wheels will spit fire.

For instance, take a man on a building or a man in a shop. It may be not only his first day, but it may be his "off day." He will lose his rule, break his chisel, spoil a job or two, upset something, and numerous other miscues. The foreman who is seldom in a position to tolerate too much of this jinx business will come to the conclusion that the new man isn't worth the room he takes up, and fires him. At the same time, this fellow may be an excellent mechanic; in fact, one who would prove worthy of his hire. I have known of similar cases, and so have you, Mr. Reader. We all have our right-hand and left-hand days.

Some men are so well taken care of by the Goddess of Luck, they could put in eight or nine hours at causing vacuums and get paid for overtime; others could work so fast they would set a stick afire from friction, and would be docked if they stopped to scratch their head for an idea. I suppose there is some long drawn out answer to this; but I am not in a position or condition to bore for it.

Take, as an example, the pair of fellows that are having a talk fest. The boss rolls around the corner unexpectedly. One of the stereotyped tricks is to pretend you are looking for something; another, he was talking about the *work*; in fact, a fellow becomes an inventor so quick he surprises himself. In the meantime the boss is imitating the glue-pot—he is getting to the boiling point. Some men don't budge, but carry the loaferino to an end, boss or no boss. I have had the opportunity of playing all three parts in such a drama. Drama is too mild for the case—tragedy is better, with the boss in the role as villain.

There are days when a man will work to a firm's interest; everything he does counts on the profit page. Other days he can't get his rudder straight all day. This is not only the case in a shop or on a building, but in an office. Some days the sunlight will penetrate the windows of an office and reflect success and good cheer in chunks as large as a brewery. The click of a typewriter sounds like a Wagnerian composition played on a harp with strings of radium. Other days the boss and all others feel as though they were buried head down in an avalanche of Chicago River mud.

The foregoing only goes to prove that we are but human, and to put up with each other's shortcomings and mishaps is the Keystone in the Arch of Good Fellowship, and the good ship Golden Rule, safe in the harbor of Human Nature.

WM. C. JASBURY.



New Use for Cap and Gown

"Some newfangled scarecrow you have in the fields, Hiram?" "No, that's my son. He insists on wearing his cap and gown while hoeing potatoes. He was graduated from an agricultural college, you know."—*Boston Transcript*.

CORRESPONDENCE



Questions Answered and Ideas Exchanged.

Our Readers Are Requested and Urged to Make Free Use of These Columns for the Discussion of All Questions of Interest to Carpenters and Builders.

Wants "Boss Carpenter" in Book Form

To the Editor:

Fayetteville, Tenn.

A thought has come to me many times as I have read the "A. C. & B." the last three years; namely, that it would be a very good plan if you would publish the "Noon Hour Talks by the Boss Carpenter" in book form when these talks are completed. It would be very handy as a reference book.

I studied structural engineering for some time under one of the chief engineers of a large firm in New York City; but my instructions were nowhere near as clear as those given by the "Boss Carpenter."

If one wants to get any information now as to what the "Boss Carpenter" had to say relative to a certain condition, one has to look thru some thirty-seven copies of the "A. C. & B." to find it.

CHAS. E. MORRELL, JR.



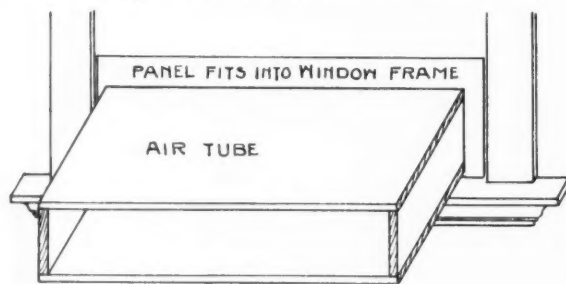
A Food Cooler

To the Editor:

Harwich, Mass.

One of the most unique kitchen appliances I have ever seen was a food cooler made from an old commode. It was so arranged that with proper adjustment eatables could be kept at a very low temperature even though the whole arrangement remained in a hot kitchen day and night. The construction was as follows:

An opening was cut in the back directly opposite the rear panel of the top drawer and of like dimensions. Then the



Construction of Air Tube, Showing Panel Fitting Into Window Frame.

bottoms of all the drawers were removed and heavy galvanized screening (about one-half inch mesh) was cut to size and fastened in their places. To make these wire bottoms more secure a couple of wooden strips were nailed across the bottom on the under side of each drawer. Through the partition separating the row of small drawers from the empty compartments was bored a dozen or more half-inch holes. Then the whole interior, including the drawers, were given two coats of white enamel. The outside was also enameled, although that of course is optional.

Next, an air-tube in the shape of a flat box open at both

ends was built to fit exactly the opening in the rear of the commode; the opposite end being fitted to an opening in a panel which in turn was made to fit snugly in the window-frame and down on the window-sill. The panel also butted close against the bottom of the lower sash for which purpose the metal finger holds wear removed. This exposed end of the tube was covered with netting to exclude all dirt and foreign matter. The length of the tube depends upon the distance the commode has to be placed from the window.

Thus it will be readily seen that with the window raised the desired distance, a current of cool air is induced to circulate through the entire compartment and effectively cools the contents in winter weather.

L. B. ROBBINS.



Another Fast Shingler

To the Editor:

Bellingham, Wash.

I read with interest the letters from some of your readers about fast shingling. If they would come out to the coast for one or two seasons, they would get their eyes opened. I don't doubt what Mr. Pierce says at all, about his fast shingling. My partner, Mr. W. S. Baker, was a shingler by trade before he took up carpentry work steady, and I have seen him put on one bunch in thirteen minutes. He can put on good, clear shingles at the rate of one thousand per hour all day long, putting two nails in each one.

We have built seven or eight houses this summer, and have shingled everyone in eight hours, with the exception of two. We put on one roof requiring 12½ thousand shingles in seven hours, and they were second grade shingles, only 10 inches clear. We just finished a play shed at Marietta School that required 14½ thousand shingles, and they had to be nailed with 3d galvanized nails, and this was completed in nine hours.

I can put on six thousand in eight hours; and I don't claim to be a shingler either. Baker will carry eight courses thru at once. He has a seat that he straps right on his leg so he does not lose any time in moving about. He places his shingles right where he wants them, then he breaks a bunch and takes half of it and places it where he can reach it easily, and he never moves more than twice during the whole time. I always divide my bunches like Mr. Pierce says he does, and I find it very convenient. I only carry six courses thru at once.

This has been a good year for us. We started in January and have been busy ever since. We have built eight residences, the most of them five-room bungalows, one addition to a school, one play shed for the school children, and now have a brick block under way. We have furnished our own plans on all but the school addition, play house and block.

Yours for better building,

GEO. A. BROCK, of

Brock & Baker, Contractors.

Double Scribing Gauge

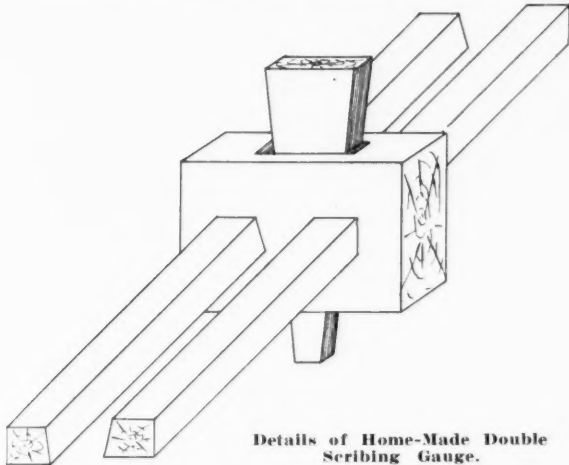
To the Editor:

Houston, Texas.

This is a very handy gauge for the carpenter and it can be made very easily by any mechanic. It works from both sides and can be made from any kind of hard wood. Walnut is the best, as it stands more wear than any other wood.

The block is 1 inch by 2 inches by 3 inches long. A hole is mortised in the center of the edge $\frac{5}{16}$ inch wide by $\frac{15}{16}$ inch long at the top and $\frac{3}{4}$ inch at the bottom.

On the flat side put two holes to take the scribing sticks. These holes are $\frac{3}{4}$ inch from the top and bottom and $\frac{9}{16}$ inch from the ends. They are $\frac{11}{16}$ inch apart at the top of the hole and $\frac{5}{8}$ inch at the bottom. They are $\frac{1}{2}$ inch



high, $\frac{9}{16}$ inch wide at the top and $\frac{5}{8}$ inch at the bottom. The wedge is $\frac{5}{16}$ inch thick, $1\frac{1}{8}$ inch wide at the top and $\frac{3}{8}$ inch wide at the bottom and 4 inches long.

The two sticks are made the same size as the holes in the block and are 8 inches long. Drive a brad at one end of each stick and file it to a point as a marker. The two sticks are to fit the holes snug and when they are set, tap the wedge a little and it will hold the sticks as tight as any screw and there is no danger of ripping the threads on the screw.

The sketch shows the tool complete, all ready to use. It is one originated in the old country and found to be equal to any wood scribing gauge. There are but few made in this country and one in each carpenter's tool box will be greatly appreciated.

CHAS. SCHADEL.



Fast Work Laying Concrete Blocks

To the Editor:

Humboldt, Iowa.

In your October number I read an article about a carpenter, Mr. Pierce, who can put on a thousand shingles in fifty minutes, and Mr. Towne, also a carpenter, who can put on a thousand in forty-eight minutes. I was telling this to a carpenter and he remarked that he would have to see it before he could believe it, and wanted to know what I thought. I told him that I had to believe it because I knew some mechanics who were very fast in some certain line of their trade; but the carpenter could not believe it.

My trade is masonry work; any kind, such as stone, brick, block and all kinds of concrete work. I was laying cement blocks on the same barn as this man was, and he asked me how many blocks a man could lay in a day. I told him that I could not answer him, as he would not believe me. I had 160 blocks 8 by 8 by 16 inches to lay at one o'clock, and I told him at that time if he wanted to go to town at four o'clock, to be ready. He only laughed at me, but when three-thirty o'clock came, I told him I was ready. Well,

he said, "that means that you can lay 600 in ten hours." And that is what I do.

I have just completed another barn, 40 by 70 with 18-foot side walls and two hip roof gable ends, in ten days, or 600 blocks for ten days straight with two tenders on first story, three on second story, and four on gable ends.

J. H. MAVER, Pres.,

Humboldt Cement Products Mfg. Co.



North Carolina Brick Cottage

To the Editor:

Hendersonville, N. C.

The illustrations accompanying this letter show a five-room brick bungalow that I have erected in the town of Brevard, N. C., for Mr. Branch Tinsley.

The walls are made of common brick which is laid in back mortar $\frac{5}{8}$ of an inch thick. The joints are raked out to a depth of $\frac{1}{2}$ inch. The brick walls are made twelve inches thick with an air space between to keep out moisture and



Floor Plan and Arrangement of House, 30 by 32 Feet.
Built by J. V. Allen.

dampness. The exterior trim is of concrete, and the roof is made from Edwards Spanish metal tile.

The wood work is of North Carolina pine. All that is used on the outside is painted white and the interior is stained in mission. The cost was between \$2,000 and \$2,300.

J. V. ALLEN,

Contractor.



Mr. Branch Tinsley's House at Brevard, N. C., as Completed.

Cork Top for Concrete Floor

To the Editor:

Tiskilwa, Ill.

Can you tell me how to put in concrete floor with cork top for a gymnasium in school? If so, I would like very much to know how it is done.

E. A. KENNEY,

Contractor and Builder.

Answer—Regarding a concrete floor with a cork top, your subscriber undoubtedly refers to a floor of concrete on which is laid either Nonpareil cork tiling or Linotile.

Nonpareil cork tiling is made of cork shavings compressed in tile form and may be laid over any smooth base. Linotile is a composition of ground cork, linseed oil, and the necessary color ingredients. It is also supplied in tile form and is installed in the same manner as Nonpareil cork tile. Linotile is sold through our branch offices and agents, while Nonpareil cork tiling is handled exclusively by Messrs. David E. Kennedy, Inc., New York City.

ARMSTRONG CORK COMPANY.

Pittsburgh, Pa.



Wants House Moving Articles

To the Editor:

Dexter, Mo.

I subscribed for your paper the first of this year. I am a carpenter that is specializing in house moving, and I hoped



Remodeled Front, Showing Broad Windows and Pleasant Entrance.

to see something on this subject in your magazine. But, up to the present time I have seen very little on this subject, outside of some one that had something to sell. Is there no demand? Does no one wish to read articles on this subject? Do you publish a book or know of any one who does, on house moving? I like to read your magazine, and look at the advertisements, but that is not of much value to me.

Since I subscribed for your magazine, I have raised two houses and put concrete foundations under them, and have moved six houses and ten barns; so you see this is quite a live subject with me. This is not quite up to my regular rate of moving for the last 18 years.

The object of this letter is to get something started in the house-moving line. I would not mind telling how I do some things, if some one else would tell a little more.

J. E. STONE.

Suggests Boys' Department

To the Editor:

Vernon, B. C., Canada.

I think if you instituted a Boys' Section (perhaps a couple of pages), fine drawings and specifications of simple articles that boys could make for ornamental uses, and which would add to the comfort of their homes, you would encourage a great number of embryo carpenters. Boys from ten to sixteen years old are very keen to make—wheelbarrows, dump-carts and bobsleds for their own pleasure, and wood and coal boxes, ironing boards, box foot-stools, etc., for presents. I know you have fine plans of furniture, book-cases, etc., which have been highly appreciated, but many of these have been beyond the average boy.

I must thank you for the many pleasant hours spent in reading the AMERICAN CARPENTER AND BUILDER, and trust you will long continue to publish such a clean, useful and entertaining publication.

CHRIS. B. L. LEFROY.



Remodeling a Village Store

To the Editor:

Fremont, Ohio.

I am sending you two photos of a small store building before and after remodeling. You will see by this how much good I have received from just one of the detail plate designs taken from your book, called "Radford's Details of Building Construction." The ideas I have used here are found on page 104, Plate 94. This makes a very neat little store building. Everyone here likes it.

CHAS. T. ROYCE,

Contractor and Builder.



Dark and Unattractive Front of Store Building Before Remodeling.

Cobblestone Fireplace in Frame House

To the Editor:

Munro Falls, O.

If it is not asking too much, I would like a little information regarding a fireplace I wish to put in a house that I am building. The fireplace is to burn wood and is to be built of field stone or hard heads, with a wood top or shelf. The chimney is supposed to be outside, not showing upstairs, and to be built of brick. I want to get all the heat possible, and yet not smoke the room. The house is to be frame, sided with drop siding, no sheathing.

I would like to know how the woodwork, such as the frame

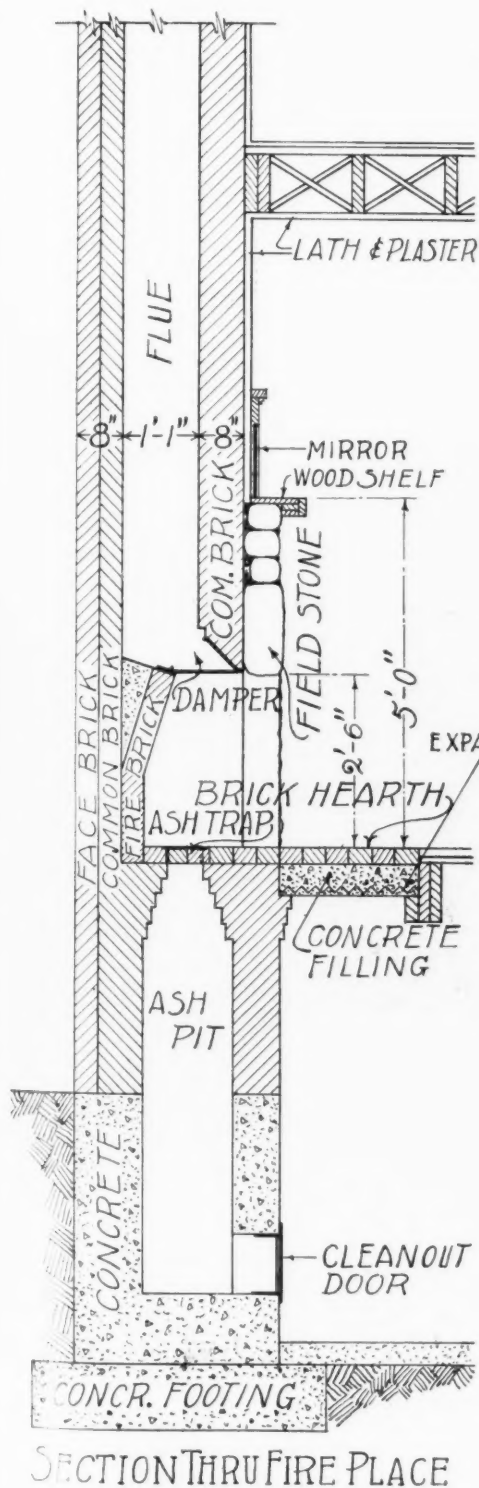
and siding, is joined to the brick to make a tight job. The room is to be 20 feet by 9 feet 3 inches wide. I would like to have you show me a plan and elevation, and dimensions of how this should be put in. Kindly give me details of how it should be at the joints between brick and wood. Show plan, section and elevation to give best results.

If there will be any charges on this, please let me know by return mail, and I will forward same. I am a reader of your valuable magazine, the AMERICAN CARPENTER AND BUILDER.

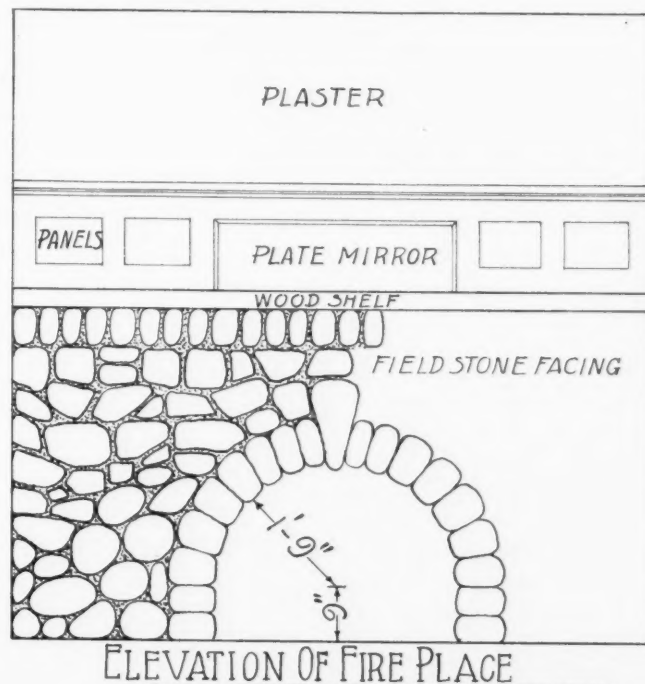
E. J. SPRIGGEL,
Contractor and Builder.

Answer—Here is a sketch showing details of this proposition. There is no charge for this service. We are glad of the opportunity of assisting our readers. You will see that a vertical section thru the foundation, ash pit, and flue is presented; also plan view of fireplace, showing cross section and details of construction. Cross section of the chimney at the second floor line is also given. Note that this is an exterior brick chimney tied to the framework of a house by means of anchor bolts.

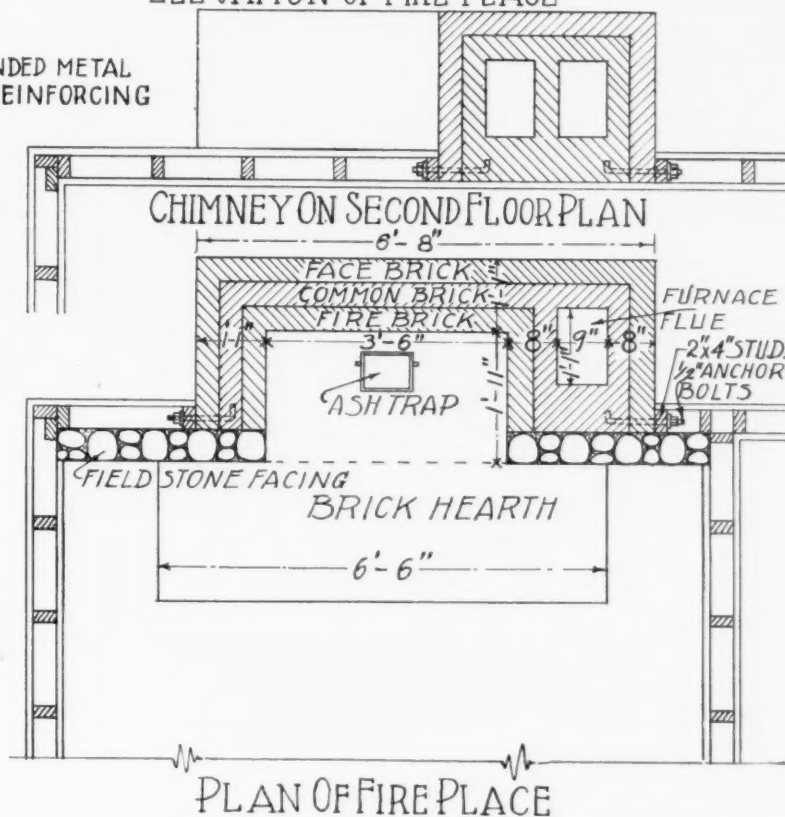
The elevation of the fireplace and mantel shows a harmonious design using field stone.



SECTION THRU FIRE PLACE



ELEVATION OF FIRE PLACE



PLAN OF FIRE PLACE

Details of Construction of Fireplace Built with Field Stone Face.

To Prevent Frosting of Store Windows

To the Editor:

Borill, Idaho.

I would like to bother you for a little information if I can. I would like to know how to keep show windows from frosting. I put up several store building and their show windows are inclosed from the store room; the idea is to keep the glass from frosting so you can see everything that is in the show window from the outside.

Is there any way of ventilating it from the outside without spoiling the looks of the front, and keep the frost off the plate glass? If so, I would be very thankful for your information.

WM. B. BOLL.

Answer—The general recommendation of manufacturers who furnish material for show window construction is to provide plenty of openings for the entrance of cold air around the sash which holds the glass, and to shut off the show window from the interior of the store by means of a very tight boxed effect. In order to accomplish this result the floor and walls should be double, having a good quantity of building paper between. If glass is used in the partition, it should be set with putty and not with wood stops for the reason that if wood stops are used they soon warp and shrink away from the glass so that it rattles and the enclosure is not tight. If there is to be a door entering the show window, from the store, as most always is the case, this door should be double rabbeted, the same as in the construction of an icebox, using rubber weather strips around the opening.

There are times during the fall and spring months when a show window, even if properly ventilated and enclosed, is

filled with cold, damp air. If a sudden drop of temperature strikes the glass it will cause the moisture in the show window to frost before the air from the outside has had time to enter and take up this moisture.

A continuance of the cold, however, will cause the frost to disappear and the windows to remain clear.

EDITOR.



Well Built Two-Story Corn Crib

To the Editor:

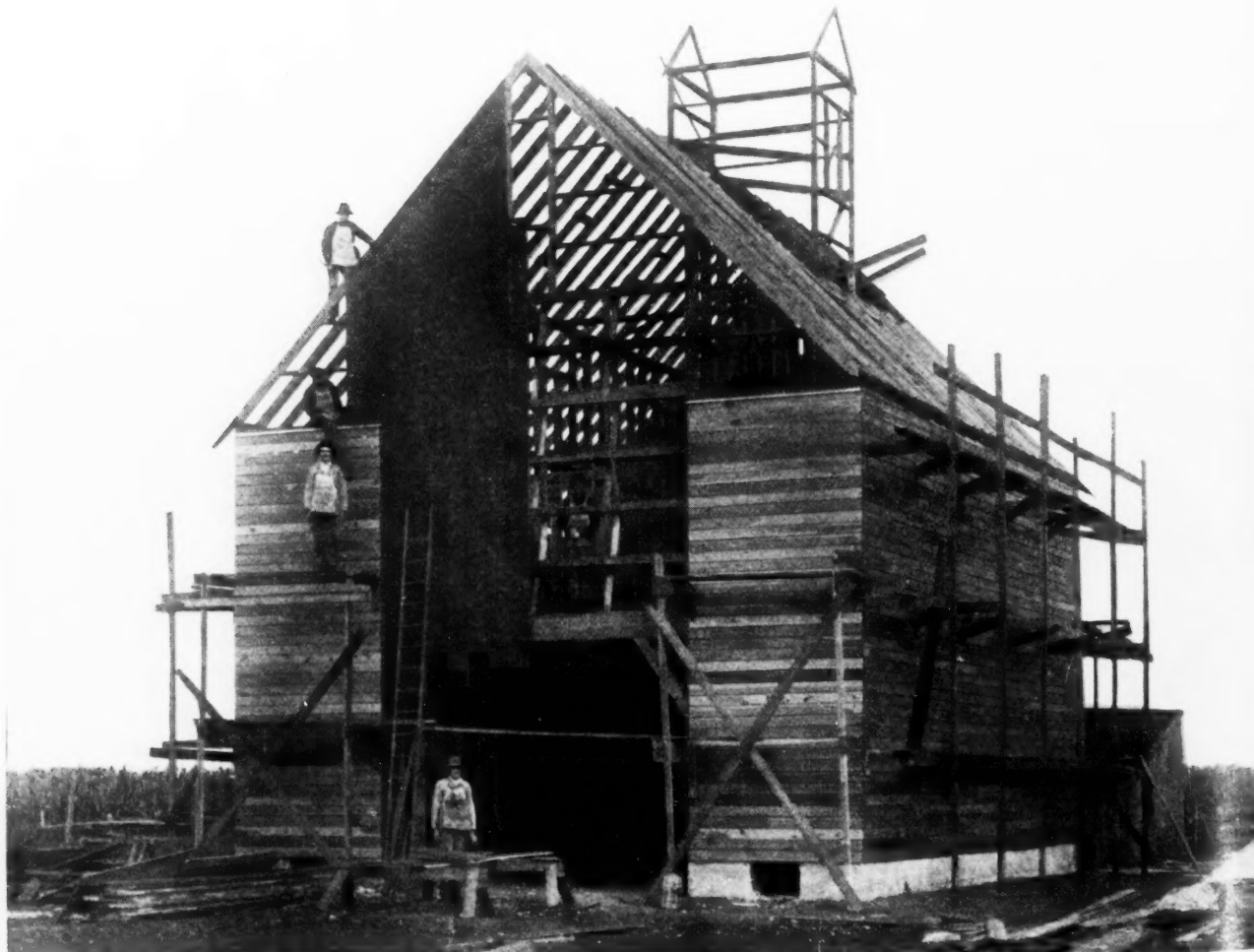
St. Anne, Ill.

Enclosed you will find a photo of a large corner crib under construction. Its dimensions are as follows: 44 feet long, 22 feet high to the plate, 15-foot driveway and 8-foot cribs.

This is the second of a series of three that I am building this fall, as will be seen from the illustration. I believe in strong construction, the studdings are 2 by 8 inches, and the granary joists are 2 by 14's, triple and bolted together, the center one being in the form of bridge work and dovetailed into the studding. The crib floors are of concrete with iron sockets for studs and dragbelt down the center for shelling.

On account of a delay in the making of the foundation, I was obliged to frame all of this building beforehand. All of the timbers were framed and put in sections and painted ready to be raised before the foundation was made. Five men were at work four days to accomplish the work shown in the illustration from the time the first section was raised.

DESIRE J. KERGER,
Carpenter and Contractor.



Large Two-Story Corn Crib Built at St. Anne, Ill., by Desire J. Kerger. All Timbers Framed, Painted and Then Raised in the Construction.



Model Lumber Shed of R. J. Corlett & Sons, Hillsdale, Mich.
Dimensions 101 by 185 Feet.

A Model Lumber Yard

To the Editor: Hillsdale, Mich.

At Hillsdale, Mich., there is a lumber yard all under cover except the railway track.

It is one of the six yards owned by Robert J. Corlett & Sons.

The covered lumber yard is 101 feet in width by 185 feet in length, enclosed by heavy brick walls 12 feet high built on a solid foundation of concrete.

The yard is covered with a roof of the monitor type, with plenty of windows in the monitor, which throw a cross light down into each side of the building. The light penetrates across and down into each lumber pocket so that the big shed is light enough to show the different grades of lumber even on cloudy days.

An electric lighting system extends clear around the driveway with 16 candle-power lamps placed at intervals of 20 feet. The wires are run through half-inch gas pipes with a T-coupling to connect each light bulb.

This precaution is to prevent the wires from coming in contact with the woodwork and causing fire. Incidentally, it helps to lower the insurance rate.

The shed contains 67 lumber pockets 10 feet wide each, reaching inward 16 feet from the wall on both sides of the shed to the driveway. Next to the lumber pockets are the driveways, 17 feet wide, which leaves 32 feet in width for the center part of the building.

This center, or monitor section of the building really is the main feature because of the convenient manner in which it is arranged.

The front, or street end of this center section, contains rather a spacious office which is divided into two rooms with the front door opening onto the street. There are two side halls with doors opening into the two side driveways of the shed, as shown in the floor plan.

Under the office is the steam heating plant which keeps the office comfortable in winter.

Over the office is a shop for cutting glass, for glazing, window greens, farm gates, and for doing repair jobs. The shop is well lighted in front and at the sides.

The whole center section of the big shed is floored above the lumber piles, and is used for the storage of sash and

doors, all sorts of mouldings and battens and other light stuff of many kinds and varieties.

The roof boards are laid diagonally across the rafters for additional strength. On the roof boards is laid a covering of fire-proof granite slate roofing.

The side walls are of brick, 12 feet high. The sides of the monitor hip is 18 feet high, and the peak is 28 feet above ground.

To build this shed, Mr. Corlett used 800 barrels of cement, 300 loads of gravel 160 M. brick and 150 M. feet of lumber. It took 300 squares of roofing to cover it, and two tons of nails to hold it together.

As it now stands, the shed has a holding capacity of two million feet of lumber.

HERBERT SHEARER.



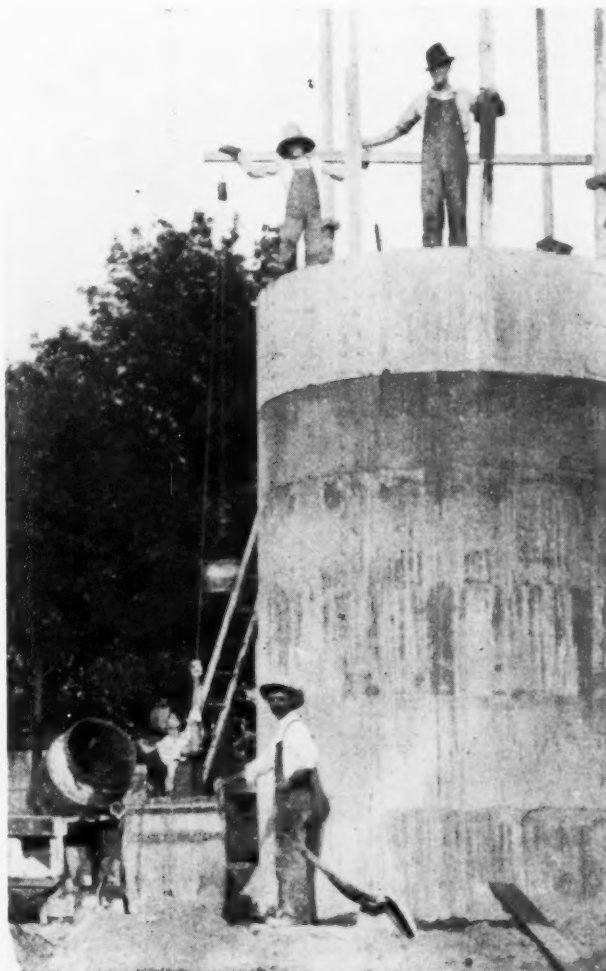
Cement Silo Work

To the Editor:

Rose Lawn, Ind.

This is a picture of a cement silo, and my crew at work on it. It is built on the farm of Fred Nelson, near the town of Rose Lawn, Ind. We are using home-made forms.

V. D. McCORD.



Cement Silo Built with Home Made Forms and Mixer by V. D. McCord, Rose Lawn, Ind.

Bill of Material and Design of Alberta Home

To the Editor:

Nanton, Alberta, Canada.

As I have never seen any buildings shown in your paper from Alberta, I am sending you a picture of a house that I built in the country a year ago. The plans were taken from your book, "Radford's Estimating and Contracting."

HENRY GAHN.

The bill of materials used in this house should be of interest to our readers. It is reprinted here as it appeared in "Radford's Estimating and Contracting":

Timber, Lumber, Lath, etc.

105—2x8x14 ft. No. 1 pine.	8—2x 4x16 Sel. common S2S.
12—2x8x16 ft. No. 1 pine.	1—2x 6x16 Sel. common S2S.
115—2x4x16 ft. No. 1 pine.	5—1x 4x16 Sel. common S2S.
25—2x2x14 ft. No. 1 pine.	15½ M. red cedar shingles.
20—2x6x14 ft. No. 1 pine.	9½ M. common No. 1 lath.
155—2x4x18 ft. No. 1 pine.	3,540 ft. No. 3 shiplap, 12-14-16.
85—2x4x12 ft. No. 1 pine.	2,000 ft. No. 2 pine sheathing,
2—6x8x14 ft. No. 1 pine.	12x14.
2—2x6x16 ft. No. 1 pine.	1,800 ft. flooring maple, oak, and
400 ft. No. 1 common pine S2S,	yellow pine.
1x10x16.	200 ft. porch flooring, ¾x4x14,
300 ft. No. 1 common pine, S2S,	fir.
1x6x16.	1,900 ft. 4-in. sugar pine lap
5—1¼x10x12 C finish.	siding.
2—1¼x 8x12 C finish.	600 ft. ¾-in. yellow pine ceil-
3—1¼x 6x12 C finish.	ing.
22—1x 8x16 Sel. common S2S.	253 ft. 3¾-in. crown molding.
2—1x12x14 Sel. common S2S.	400 ft. 2¼-in. bed molding.
1—1x12x16 Sel. common S2S.	200 ft. ¾x1¼ cove molding.
16—1x10x16 Sel. common S2S.	200 ft. screen molding.
5—1x 6x16 Sel. common S2S.	100 ft. ¾ quarter-mold.

Window and Door Frames.

4 window-frames, 2-10x5-2.	3 frames, 20x24, 2 light.
2 window-frames, 1-10x5-2.	1 frame, 20x20, 2 light.
1 window-frame, 3-8x5-2.	2 outside door-frames, 3x7.
1 window-frame, 4-0x5-2.	1 outside door-frame, 2-8x6-8.
2 triple window-frames, 18x20,	
2 light.	

Windows.

6—18x20, 2-light D. S. windows.	4—30x28, 2-light D. S. windows.
2—18x28, 2-light D. S. windows.	3—20x24, 2-light D. S. windows.
1—26x20, 2-light D. S. window.	1—20x20, 2-light D. S. window.



House built in Alberta, Canada, by Henry Gahn.

1—40x28, 2-light D. S. window.	4—12x16, 2-light D. S. windows.
2—44x32, 1-light D. S. windows.	

Doors and Trim.

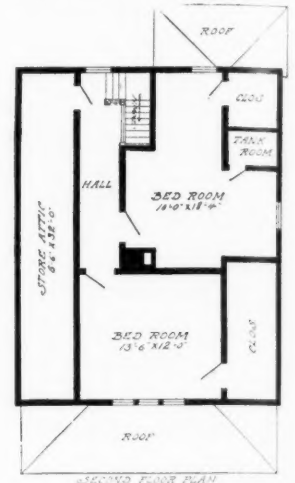
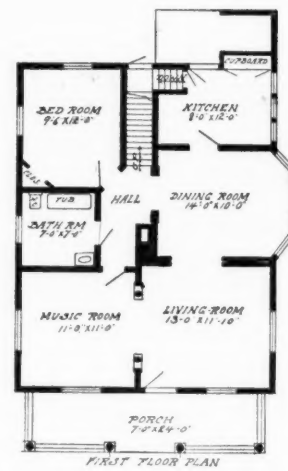
1 front door, 3x7x1¾, bevel	560 ft. casing, No. 8310.
plate glass 24x40.	280 ft. embossed molding, No.
1 door, 3x7x1¾.	8413.
1 door, 2-8x7x1¾.	204 ft. cap molding, No. 8410.
2 doors, 2-6x7x1¾.	180 ft. head casing, No. 8411.
2 doors, 2-4x7x1¾.	180 ft. fillet, No. 8395.
1 door, 2x7x1¾.	50 base blocks, No. 2273.
2 doors, 2-6x6-6x1¾.	48 ft. window-stool, No. 8267.
3 doors, 2-4x6-6x1¾.	72 ft. window apron.
1 door, 2x6-6x1¾.	456 ft. window-stop, No. 8095.
1 door, 2-8x6-8x1¾.	4 porch columns, 8x8 ft., No.
1 door, 5x7x1¾.	1151.
1 door-jamb, 8x7 ft.	2 colonnade posts, 5 ft. 6 in.
1 door-jamb, 5x7 ft. 3 in.	base.
1 door-jamb, 5x7 ft. 5 in.	50 balusters, 1¾x24 in., No.
1 door-jamb, 5x7 ft. 5½ in.	2151.
5 door-jamb, 2-8x7 ft. 5½ in.	1—1¼x8 ft. yellow pine.
2 door-jamb, 2-6x6-6 ft. 5½ in.	1—1x10 in. x 16 ft. yellow pine.
428 ft. base molding, No. 8420.	3 cupboard doors, 1-8x4 ft.
428 ft. base, No. 8421.	2 cupboard doors, 1-8x2-6.
428 ft. shore, No. 8422.	

Foundation, Plaster, and Chimney.

9 cords stone.	11 bbls. lime.
96 cement blocks.	1 bbl. cement.
47 sacks plaster.	1,100 brick.
8 yds. sand.	

Hardware.

100 lbs. 10 d. wire nails.	1 single sliding-door outfit, 5
122 lbs. 8 d. wire nails.	ft. opening.
107 lbs. 20 d. wire nails.	1 single sliding-door lock set.
9 lbs. 6 d. wire nails.	1 doz. cupboard catches.
62 lbs. 3 d. galvanized wire	1 doz. sash-locks.
nails.	1 doz. drawer-pulls.
57 lbs. 3 d. finish nails.	18 prs. door butts, 3¼x3¼.



Floor Plans of House Built from Plans in "Radford's Estimating and Contracting."

12¼ lbs. 10 d. casing nails.	1 doz. fancy box hinges.
53 lbs. 8 d. casing nails.	3 doz. window springs.
23 lbs. 8 d. fin. nails.	1 pr. shelf brackets, 8x10.
25 lbs. 7 d. box nails.	1 pr. shelf brackets, 10x12.
13 inside door lock sets.	2 stovepipe thimbles.
12 doz. ¾ screws.	7 10-ft. lengths eaves trough.
2¼ lbs. 1-in. brads.	4 pieces outlet.
27 ft. valley tin, 14 in.	6 end caps.
32 window tins.	8 eaves-trough elbows.
176 tin shingles, 5x7.	3 doz. eaves hangers.
19 8-ft. lengths ridge-roll.	5 pieces conductor pipe, 8 ft.
50 wire screen, 24 in.	2 bundles sash-cord.
50 wire screen, 32 in.	200 lbs. window weights.
2 screen doors, 3x7.	

Painting and Oiling.

2¼ lbs. putty.	7 gal. linseed oil.
1 lb. steel wool.	2 gal. turpentine.
15 sheets sand paper.	7 gal. outside white paint,
1 gal. floor oil.	prime and trim.
1 gal. floor varnish.	4 gal. yellow stone paint for
3 gal. interior varnish.	body.
4 pints burnt turkey umber.	

Gambrel Proportions

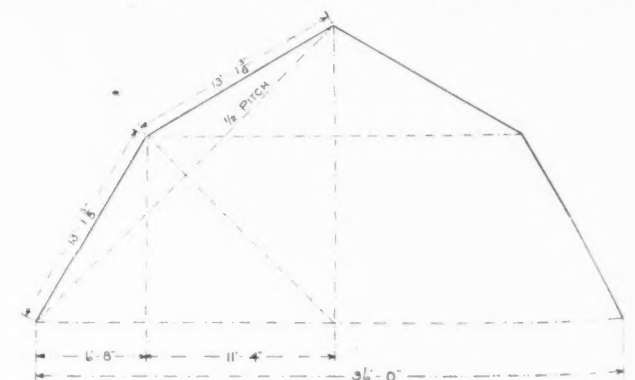
To the Editor:

Tyndall, N. Dak.

Pardon me for coming again for information, but I have a gambrel roof with 36-foot span and would like to know a good proportion to use, also the length and cuts of the rafters.

M. P.

Answer—A good proportion is to use 12 and 7 on the square for both sets of the rafters with a total rise same as for the one-half pitch roof, as shown in the illustration. The simplest way to arrive at a problem of this kind is to lay off a diagram, say, ½ inch, or an inch to the foot, 12 and 7 being the proportions to use for the pitches. This can be arrived at with the square, 7 being used for the run of the lower set and 12 for the upper set and where the two pitches



Elevation Showing Proper Gambrel Proportions for 36-Foot Span.

intersect will be the point of the knuckle. In this case 6 feet 8 inches and 11 feet 4 inches will be the respective runs, as shown. The decimal per foot in either case for the length is 13.89 and consequently both sets of rafters are identical. The side of the square on which 7 is taken gives both seat and plumb cuts and by applying the same on the square at the proportions of 12 and 12 on either seat or plumb cut line, will give the proper angle for the knuckle joint.

A. W. WOODS.

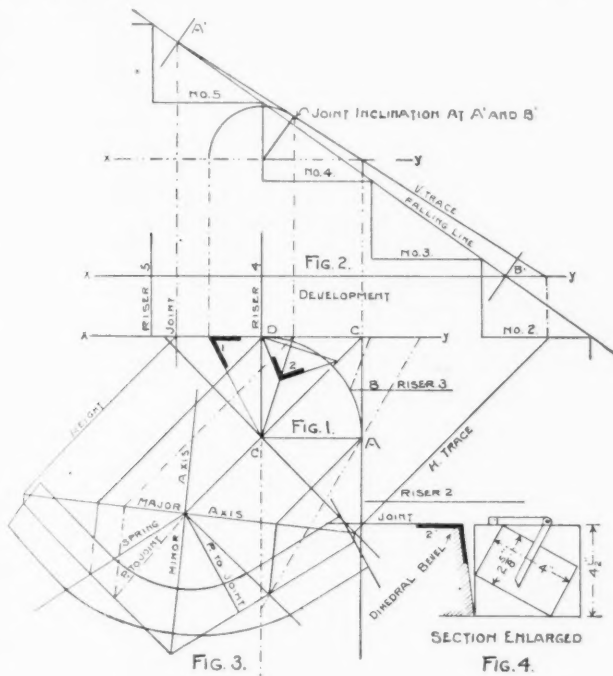


Handrailing on the Falling Line System

To the Editor:

Toronto, Ont.

The present article on hand-railing is for the benefit of those who have practiced the square cut system. It is required to produce a solid wreath that will stand correctly over plan.



HAND RAILING
ON THE FALLING LINE SYSTEM.

Method of Developing Plan, Etc., of Hand Railing on Falling Line System.

Fig. 1. First develop the center line of plan and draw the falling line, as shown. This being straight, the tangent will have equal pitches. It will be noticed that the riser B is made to stand in the cylinder 4 inches from A, while that of D is fixed on springing line. This is an excellent plan for two reasons. First, because the development from riser b to riser D on Plan Fig. 1, is equal to the width of a square step. Result is, we have a falling line that is perfectly straight. It will contain no ramps, except the ordinary ramp of reverse order, also the balusters around the curve will be equally spaced in center of rail, which is of some importance. He who can use a falling line intelligently is free from hard and fast rules; he can give his rail the best possible shape regardless of how the risers are placed.

Fig. 2 shows the development of plan.

Fig. 3. The face mould, with minor axis and right vertical trace.

Fig. 4 shows enlarged section of rail, with bevel applied. 1. is twist bevel for both ends. 2. Dihedral bevel for both ends. 2'. shows it applied on end at Fig. 4. The finished size of rail is $2\frac{5}{8}$ by 4 inches out of a plank $4\frac{1}{2}$ inches thick.

JOHN MACLACHLAN.

Flooring Border in Alcove Room

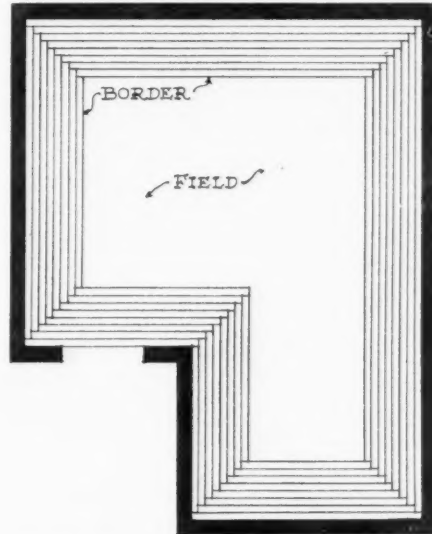
To the Editor:

Winnemucca, Nev.

I would like you to give me your opinion on the proper way of laying and finishing a quarter sawed oak floor, in a room as per sketch, whole floor to be finished. Will it look good to lay it with a 30-inch border, corners log cabined, and how should it be laid in the part of the room that projects beyond the rest, that is, if laid with border?

C. E. WEIHEL.

Answer—The accepted style for running an ornamental floor border in a room shaped as yours is, namely, an alcove



Flooring Border Suggestion for an Alcove Room.

room, is to carry the border all the way around up into the alcove, the same as in the main part of the room.

The log cabin style corners will be entirely satisfactory.

The accompanying sketch will show you one style of work for this proposition.

EDITOR.



An Idaho Home

To the Editor:

Kimberly Idaho.

I have been taking the magazine for two years. I could not get along without it now. It is a partner in my business.



House Built at Kimberly, Idaho, by Arthur H. Fay.

I am enclosing a picture of a home I built last year; it is 26 by 40 feet, 12-foot studs. I did all the inside work myself. It has many built-in features. I am also building a garage to match the home.

ARTHUR H. FAY,
Contractor and Builder.

Would'nt Do in His Gang

To the Editor:

Castkill, N. Y.

Appropos of the wonderful shingling stunt done by a Mr. Pierce, as published in the *AMERICAN CARPENTER AND BUILDER* several weeks ago, and seeing so many comments thereon in the columns of your valuable paper, I shall at this late day express my own opinion as an old-timer who has spend nearly 40 years of my life as a carpenter and builder; ten of them as a contractor and builder and other years as boss over different gangs, and in those years have met many different types of men, some of whom used to like to tell how much they could do; but I have never yet seen the man that could carry four or five bunches of shingles on his shoulder up a long ladder as pictured out in the *A. C. & B.*, and place them on the roof. But if I had such a man working with a gang under me, I should tell him not to do it again for reasons plain to anyone; and furthermore, it may be true that Mr. Pierce put on the number of shingles in the time that he gives—that is one thing, but when he says he *can* do it and do it in a good and workmanlike manner, why—that is another thing.

I am free to say he nor any other man can expect to pick up just the width of shingle he may want to break a proper joint every time. Then again, among all shingles in a bunch there are bound to be defective ones, such as are checked and others that are cross-grained, in which case, if the shingler is an honest man he will have to lay them down and pick up another, and so in the course of the day he would have to count on some little lost time.

No, Mr. Pierce, with all due respect to you, as a smart man in that line, I will simply say that I never yet met that one smart fellow that could do such a sight more shingling than another smart one, provided they both did an equally good job. I think also that ninety cases out of a hundred leaky shingle roofs are caused by one or two of a gang of shinglers that want to show off or else through fear of

coming out behind will, if they have made a blunder, say nothing and let it go. Furthermore (if I remember right) Mr. Pierce does his shingling with nailed or spiked shoes like a ball-player, instead of with scaffolding; and uses no line. Well, Mr. Pierce, we are not from Missouri, but we like to be shown.

WM. COMFORT.



Work to be Proud of

To the Editor:

Farragut, Iowa.

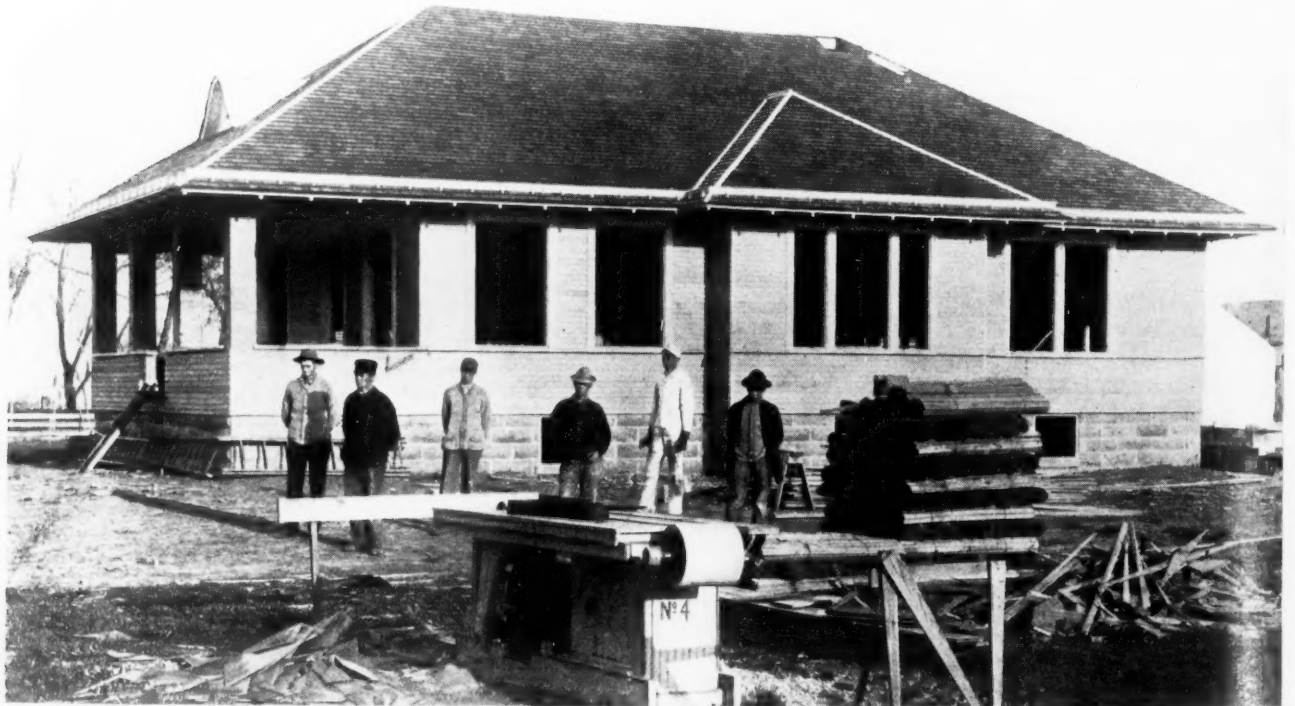
I am trying some of the Bro. Chips' ideas that are given in former issues of the *AMERICAN CARPENTER AND BUILDER*, and find them of great importance in my work.

I have some pictures or snap shots of buildings I have erected in the last couple of years that might be of interest to the Bro. Chips if I can get space in your valuable paper. I enclose a few of them with this letter.

L. L. SHARP.



This is a Nine-Room Bungalow Designed and Built by L. L. Sharp and Four Men. It Has Fine Closets and Bath and Also a Built-in China Closet Pantry. This Was Built for Mr. D. E. Brown, the Dealer in Lumber at Farragut, Iowa. Cost Complete, \$5,000.



This Bungalow Was Planned and Built by L. L. Sharp (Marked) and Men as You See in the Picture. You Will Notice Saw Rig Used Right on the Job; It is a Very Useful Piece of Machinery. This Bungalow Was Built for Mr. Rollo Jones, of Farragut, Iowa, and Cost Complete \$3,500.



This House Was Designed and Built by L. L. Sharp for Mr. B. F. Herriman, a Merchant of Farragut, Iowa. It Has Eight Rooms, Bath and Pantry, and Has Ample Closets. The Cost Complete Was \$3,500. The Corner of the Front Porch is Circular. You Will Notice a Shed for Sawing and Also the Automobile that He Says He "Does a Lot of Draying with."

Wants Fence Ideas

To the Editor:

Keyport, N. J.

Will you please publish some designs for building fences? In traveling around, one sees a great many different kinds.

I think that this subject of fence building would be of interest to all your readers, as there are so many different ways of doing it that the different brothers could send in drawings for your Correspondence Department.

I have been a reader of your paper for the last five years and have found the Correspondence of more value than any other department, as it always has something of interest to all readers.

BENJ. R. BUSH,

General Contractor.



Curving a Bungalow Roof

To the Editor:

Kanab, Utah.

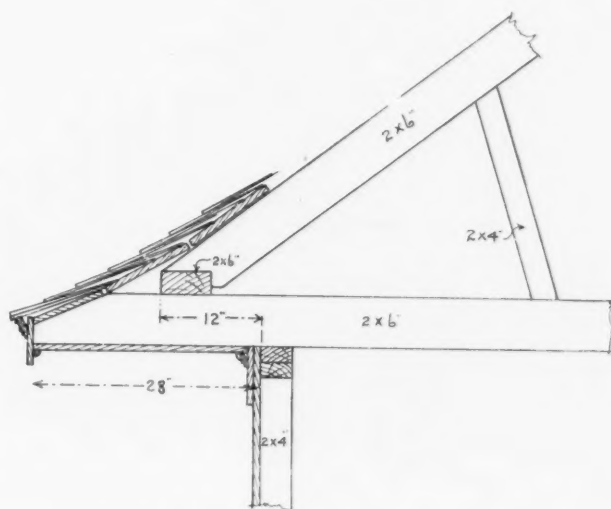
Am herewith sending a sketch for curved roof construction. I have seen many ways of building a roof with lookouts, but never found a better way for getting the dip in the curve right above the eaves. Also it is easier and quicker to build because the rafter ends are usually spiked onto the rafters, and joist are not needed in this construction. The following are the dimensions and details for a one-story bungalow.

The slope of roof is 6 inches over a one-third pitch from 28 to 32 feet wide. Rafters are 2 x 6, set on 2 x 6-inch plate, which is spiked on top of ceiling joist 12 inches from the square of the house to outside of plate. The sloping end of the joist which projects 28 inches from wall, are cut $2\frac{1}{4}$ inches up the end and $10\frac{1}{4}$ inches back on upper side. This gives nearly a foot slope and plenty of curve for the 10-inch sheathing board, which is to be a starter. The next sheathing board should be 12 inches wide. The frieze board to be

made of $7\frac{1}{2}$ inch, if 6-inch porch lintel is used, and $9\frac{1}{2}$ inch if 8-inch lintel is used. This will make the same finish all around. Rip fascia 5 inches and let it project below the ends of lookouts $1\frac{1}{2}$ inches to receive cornice, which can be put on either lengthwise or crosswise.

I prefer to put it crosswise as it then runs parallel with the porch ceiling, looks better, stays better and does not open up like it does when run lengthwise. In the inside corner any kind of bed mould can be used and in outside corner a little quarter round will be all right. Be sure to put crown mould a little higher than sheathing. This helps to give the right curve in the roof. The shingles should be started with 2 inch projection and keep them 3 inches to the weather until out of the curve in the roof.

FRED ISHOY.



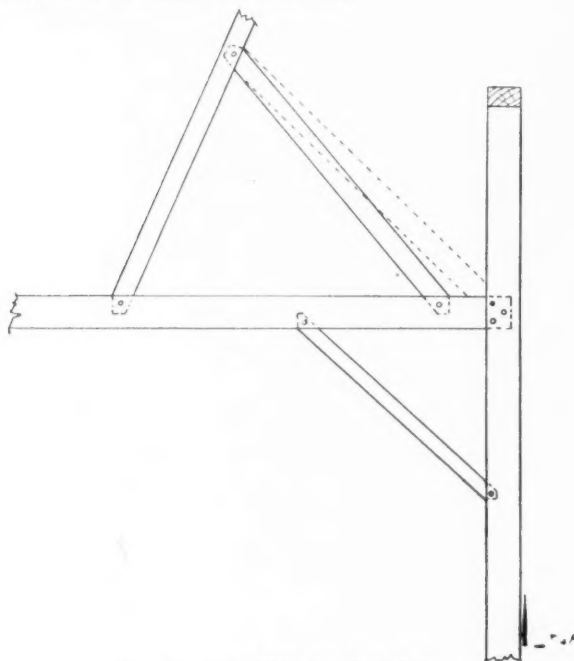
Cornice Detail for Roof with Slight Curve at Eaves.

That Purlin Brace

To the Editor:

Shelbyville, Ind

Commenting on J. B. Sydleman's purlin brace in the August number, I wish to submit the following:



Purlin Brace as Made by Roy Hall

The brace, if set as shown by the dotted lines, would kick the post or help to spread the timbers but if set as shown by the solid lines, the push is against solid timber of the tie beam, leaving no outward thrust against the post and consequently no pins to break.

ROY NAIL.



Portable Refrigerator Ideas Wanted

To the Editor:

Bloomington, Ind.

I wish you would print in an early issue a detail of the proper way to construct a portable refrigerator.

FRANK MUNDELL.

How to Remodel Roof in Rainy Time

To the Editor:

Northport, Mich.

I am a new comer in Northport having come from the west this past spring. I have been working alone on some repair work; and I want to tell you one little thing I have done that might help someone else out. The building was 18 by 30 ft. 12 ft. wall 2 feet from upper floor to top of plate. The owner wanted three windows in one side of roof dormers.

As the weather was showery, I dared not open up the roof much. The building had not been finished inside upstairs. I had to cut out about 18 feet of roof. I put shores under the rafters on the opposite side to be cut out, knocked off the collar ties, took 8 big strap hinges, went up on roof and nailed one on each pair of rafters, drove the screws in with hammer and found out how far from ridge I would cut across, so that the rafters would be long enough when raised high enough to let in the window frames. The old roof was one-half pitch.

I then sawed roof down from ridge to where I cut across. Then cut rafters off between two sheathing boards. Had two small jack screws nailed a 2 by 6 against the roof. Set the jacks under and raised it up without any bother and had my plate cut and the short studs nailed on. Cut a small gain in plate to suit rafter. When I had it high enough, I put in studding and plate, plumbed studding and nailed up through plate into rafter. Got in window frames and finished walls. Then when a fine day came, tore off old shingles and put on prepared roofing.

J. J. MCKENZIE.



Large Barn of Unusual Design

To the Editor:

Weyburn, Sask.

I am enclosing card showing a barn we have just finished. It is 58 by 60 feet, and there are some ideas on it that come out of the AMERICAN CARPENTER AND BUILDER.

R. A. CARLISLE,

Of Carlisle & Janowsky, General Contractors.

That may be so; but I'm sure we never advocated a fake front. Is this barn supposed to stand on the main business street of a small town?

EDITOR.



Barn with Decorative Front Built at Weyburn, Sask., by Carlisle and Janowsky.



New Models and Improvements for Builders

Thru this special department this month the Editors aim to keep builders, contractors, carpenters and architects in touch with what their friends, the manufacturers, are doing for them in new or improved tools and machinery, methods and materials—pertaining to building. These items are offered here as interesting information for our readers; they are not advertising. Take full advantage of these Reading Months to write for catalogs and booklets, and become thoroly familiar with these Improvements and New Goods.

New "Kawneer" Construction

Art is a quality; its elements are fitness and beauty. Inasmuch as any object expresses these elements, it is artistic.

But fitness and beauty together with strength are the highest merits which could be given an object.

Kawneer Mfg. Co. of Niles, Michigan, are manufacturing a solid copper store front construction which possesses all these merits.

The first thing that appeals to you when looking at the new "Kawneer" sash is the ease in which this sash can be glazed. There is no chance for the screws to come in contact with the glass, causing breakage. The glass is held by improved spring friction grip, giving the highest degree of flexibility, yet holding the glass with a firm grip.

The dust slide can be operated from the outside, thus preventing dirt from gathering in the sash and being carried up into the show windows by "suction," when the slide is opened for ventilation.

A wide gutter, provided with extra large holes for carrying away the condensation, is also a feature worthy of consideration.

The face piece is held in place by a pointed machine screw which engages a nut, securely riveted to the bottom of the sash.

The corner bars give a large spring friction grip to the glass. They have a refined appearance and are very compact in their construction.

The reverse corner bars, also the division bars, are carefully designed for the purpose they are intended for. Attention is called to the tubular steel reinforcement, "the stiffener," of the larger bars. These are designed to withstand the

heaviest wind pressure and are manufactured in several sizes.

The new head and side jambs, transom bars, and bulkheads, are designed in a refined manner, in harmony with the other members of the "Kawneer" Store Front construction.



Combination Desk and Bookcase Colonnade

Here is shown a nifty idea that has been developed by the Chicago Grill Works, 828-838 Wells Street, Chicago. It consists of a colonnade that is equipped with a bookcase on one side and a disappearing desk on the other. The desk folds back against the colonnade when not in use and fits into the panel work so that it cannot be seen except on close examination.

This is an ingenious idea. It saves considerable space



Chicago Grill Works Desk and Bookcase Colonnade.

and will place the desk where it will be most handy when needed. The makers say that the appearance of the colonnade is not injured in any way, but the desk is merely incorporated so as to utilize space that is often lost.

The illustration shows the construction of the desk with its pigeonholes and the drop front. The bookcase is finished in leaded glass and presents an attractive appearance.

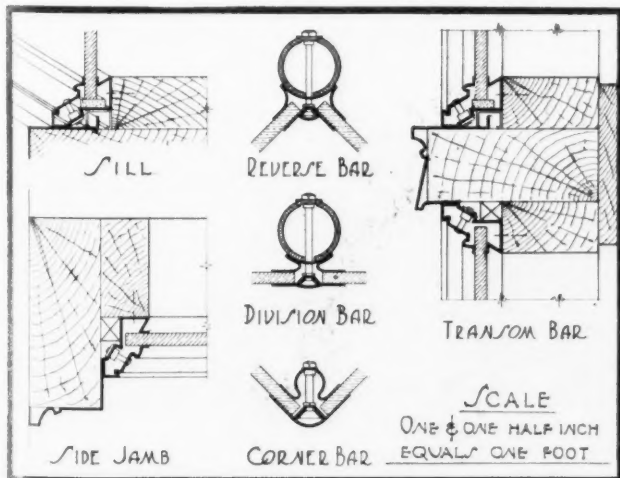
Complete descriptions and prices can be obtained from the above-mentioned company on application. It is an unusual design that will be mighty useful in many instances.



National's No. 85 Storm Sash and Screen Adjuster

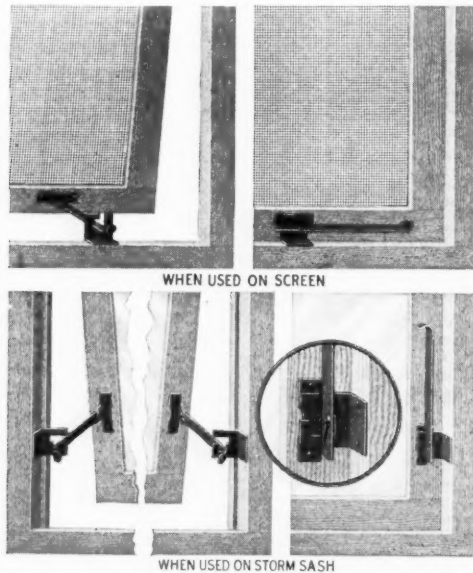
One of the main objections to adjusters for storm sash and screens is the rattling. The makers of the adjuster shown in the accompanying illustration say that this device positively will not rattle, due to the special construction of the joint.

The slot in the bar which holds the sash open is wedge-shaped, which keeps the sash firmly in position. The more



Details of New Style "Kawneer" Store Front Construction.

pressure that is applied to the bar, the firmer the wedge-shaped slot is fixed in position. The curved end of the bar prevents the sash from being pushed too far out at the



Improved Hardware Offered by the National Manufacturing Company.

bottom, as the compression against the sash will prevent this.

The adjuster is made entirely of steel. It is finished in two ways. It may be had with either a japanned or a sheradized finish. The sheradized finish is especially recommended, as it is proof against rust and will thus give longer and more satisfying service.

This sash or screen adjuster is made by the National Manufacturing Company, Sterling, Ill. They will be pleased to send further details to all our readers that are interested.



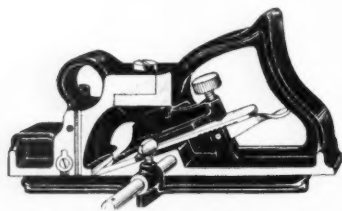
Stanley Rabbet and Filletster Plane

One of the new tools that is being offered to our readers is shown here. It is a rabbet and filletster plane that is made by the Stanley Rule & Level Co., New Britain, Conn.

The sides and the bottom of this plane are made square with each other so that the plane will lie perfectly flat on either side. It has an adjustable fence that can be slid under the bottom so as to regulate the width of the cut.

One of the specially useful parts of the tool are the two spurs which are placed one on each side. This allows the plane to be used across the grain. As both the fence and the depth gauge can be attached to either side, the plane is suitable for either right or left hand work.

The front of the plane can be easily detached, thus providing a bull nose plane for working close up into corners or other difficult places.



New Stanley Plane.



Additions to "Monitor" Line

B. F. Litchy & Sons Co., Waterloo, Iowa, wish to announce that in January their handsome new catalog will be ready for distribution. This catalog will be complete, showing the "Monitor" cupolas erected, also ventilators and knocked down vent pipes and fittings.

Knowing the necessity of proper and complete ventilation in barns as well as other buildings, they have gone into detail with this addition to the "Monitor" line of goods.

"Monitor" cupolas will be made in many styles the coming

season; steel base, ventilating base, glass base and they will also be made with round base, designed especially for round barns.

"Monitor" skylights are an old specialty of this firm, many hundreds of them being erected on buildings thruout this section of the country.

Contractors and builders interested in a high grade of cupolas and ventilation systems can write to B. F. Litchy & Sons Co., Waterloo, Ia., and will receive their new catalog.



Porter Co. Offer New Style Barn Door Track

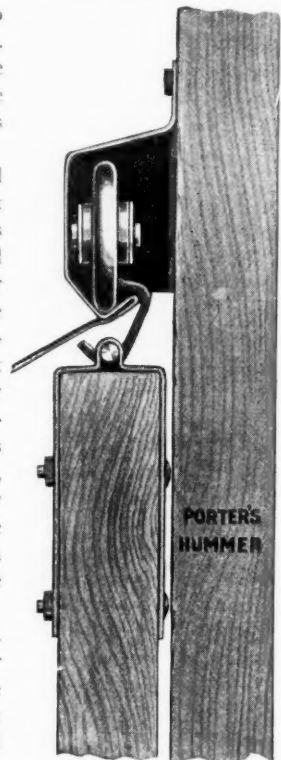
The J. E. Porter Company, of Ottawa, Ill., is marketing a new barn door hanger and track, known as the "Hummer." It will be noted from the accompanying cut, the track is made of *one piece*, the gauge of steel used is 14, and is formed in such a manner as to give the maximum strength. This one piece of steel forms the cover and track complete, there being no rivets and no brackets necessary.

The joint clamp is so arranged as to make a continuous track and no charge is made for this clamp. It will be further noted that the wheels of the hanger run in the V-shaped base of the track, making the point of contact of the wheels with the track the least possible to obtain under any construction, thereby practically eliminating friction. It is a self-centering construction, the wheels running perfectly straight regardless of the angle of the door. The track makes a perfect water shed over the hanger and door.

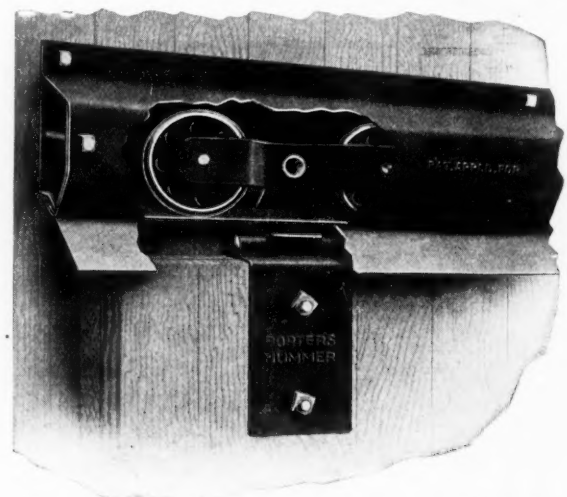
The hanger is a steel tandem. The wheels are large and *roller bearing*. It also has the flexible and can't-get-off features, and is made in the non-adjustable and adjustable types.

The track is furnished in lengths of six, eight and ten feet, with all joint clamps and a lag screw every twelve inches. The hangers are packed each pair complete in a very attractive carton, and one-half dozen pair in a case.

The company states that the selling strength already de-



Section Thru Door Track and Hanger.



Porter Company's "Hummer"—Track Cut Away to Show Hanger.

valued from the exceptional merit of this specialty rates it as one of the most popular of its products.

J. E. Porter Company, 620 Fremont Street, Ottawa, Ill., will be glad to furnish catalog and further information upon request.



New Ruby Color Asphalt Shingles

Roofing styles change just as surely and almost as frequently as any other style, either in hats or automobiles.

Many architects are giving serious thought to creative contemplation of roofing appearances. The thatched effect on roofs is now entering an era of popularity, but for a long time no suitable material was to be had to bring out the beauty of such designs. With the advent of Reynolds shingles any design is made possible.

The newest thing the Reynolds Asphalt Shingle Company offers is a new tone of red. It is slightly brighter than the old garnet minerals, and will be called "ruby." This shingle has for a surfacing a mineral wonderfully adapted to its use, having a beautiful coloring which cannot possibly fade, and possesses the same merits as the other surfacings before offered.

The flexibility of Reynolds shingles, their long life and the extremely beautiful tones of their mineral surfacing will make this product the most popular roof material offered.

Reynolds shingles are made in four non-fading colors, standard size 8 by 12 inches, very heavy and long lived. They are fire-resisting, and carry the approval of the Underwriters' laboratories. Every package labeled with the name and color and also with the Underwriters' label—none furnished in plain packages.

Address the H. M. Reynolds Asphalt Shingle Company, "Originators of the Asphalt Shingle," Grand Rapids, Mich.



"Lignine" (Wood) Carvings

The Ornamental Products Company, manufacturers of "Lignine" (wood) carvings, unbreakable, have just issued their new catalog No. 8.

Carvings are perfect reproductions of high grade, hand carved oak, mahogany, and walnut models, and have been used successfully by carpenters, builders, and cabinet makers for many years.

We recently received, unwrapped and unprotected, a rosette in perfect condition with the following test suggestions on the back:

Cut on the band saw; Drive nails into it; Hammer it.

The manufacturers must be sure of their position when they invite such rigid tests.

"Lignine" (wood) carvings are warranted by the manufacturers not to chip, check, crack, shrink, or warp and can be carried in stock without loss as they do not deteriorate with age. They are easily attached by bradding and glueing and are finished with filler or stain to perfectly harmonize with the article of which they form a part.

Their 43-page catalog showing in connection with capitals, pilaster capitals, scrolls, wreaths, rosettes, festoons, etc., a line of Adam and Louis XVI characteristics, true to period, and a sample are free for the asking and we advise our readers to send for them.



Interior Column Work

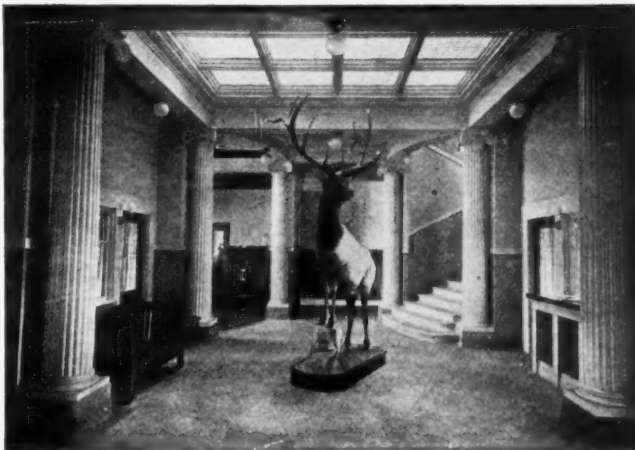
The interiors of many buildings are finished in columns and one of the best ways of handling this kind of work is by the use of metal columns. Because of their artistic, smooth finish and the various styles of finishing, they lend themselves readily to any decorative scheme that is required.

They are suitable for all climates and conditions and their

durability has been proven by their use for all kinds of interior and exterior work in all parts of the country. In the catalog of the Union Metal Manufacturing Company are shown installations that prove beyond a doubt the load-carrying capacity of these columns.

The accompanying illustration shows a hall in the Elks' Temple at Bellingham, Wash. The artistic, substantial appearance of these columns is clearly shown here as applied to interior decorations.

The metal columns are protected against the action of the elements by a coating of special spelter designed to adhere to the metal under all conditions. This coating is painted at the factory with a coat of paint especially prepared to



Union Metal Columns in Elks' Temple, Bellingham, Wash.
Wm. Cox, Architect.

adhere to galvanized iron. The seams of all the columns are securely locked and are always turned on the inside of the shaft. This leaves the outside perfectly smooth with the exception of a small crack that can be filled with putty before the finishing coat of paint is applied.

These columns are made at Canton, Ohio, by the Union Metal Manufacturing Company. They will gladly send their catalog to all interested. It shows the styles and many installations of their columns. Our readers should be informed about metal columns and can obtain all the necessary information from this concern.



North Carolina Pine for Interior Ornamentation

A few years ago no wood was perceptible on the walls of the average home. The dining-room plate-rail was perhaps the only exception.

Today, no home is considered strictly up-to-date without its panelled walls, beamed ceilings and built-in book-cases, china closets and fire-seats.

North Carolina pine is admirably adapted to interior work. It is comparatively free from resin and most attractive in figure. It responds readily to oils, wax or other floor dressings. It can be stained to represent almost any hardwood finish. Moreover, there is a decided relief from monotony when North Carolina pine is used. Its variety of grain gives it a refreshing, ever-changing delight, different in every piece but harmonious in the whole.

For flooring it is especially desirable. North Carolina pine is finished wider than most woods. This means that less material is required and consequently less money is invested when the floor is of it.

But added to all these superlative qualities is its relative low cost. Woods costing much higher are considered by many not a degree finer in beauty or durability.

Comment is hardly necessary as to its merits for exterior construction, which, added to the foregoing facts concerning its use for interiors, lends but further emphasis to the fact that North Carolina pine is truly a universal wood.



"Red Devil" Bonded Chisels

The "Red Devil" chisel is made of a pure Swedish analysis steel blade, welded to solid sockets of Norway iron. While this may seem like an expensive process, it is nevertheless just as essential to have high-grade material in tools if you want to produce good tools as it is to have a good quality cloth if you want to make a good suit of clothes. The "Red Devil" chisel, being manufactured by high-grade mechanics who know their business and who have spent not only years in experimenting on chisels, but who have used chisels.

Nor is there any attempt made at economy in putting on leather tipped chisels anything but a high-grade leather. The "Red Devil" chisel is equipped with nothing but the finest sole leather.

It is interesting to note that each chisel is accompanied by a signed Bond of Insurance, agreeing to replace within two years from date of beginning of service. There is only one conclusion, therefore, to be drawn from such a cast-iron guarantee of insurance, and that is that the "Red Devil" is right.

Smith & Hemenway Company, Inc., of 156 Chambers Street, New York City, manufacturers of over 1,000 different styles, sizes and finishes of mechanics' tools, including chisels, bits, nippers, pliers, mitre boxes, glass cutters, etc., will be glad to send to any reader a booklet showing their entire line.



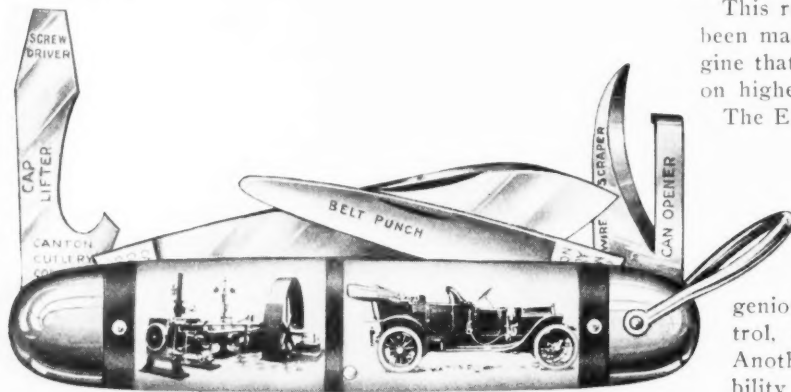
The Usefulness of a Knife Depends on the Blade

A handsome or distinctive handle on a knife is a good thing if there is something inside the handle, but there aren't many people buying knives for their handles. They buy them to use, not to look at.

The knife shown here is made with a special steel, called "Car-Van" steel. The makers of this, the Canton Cutlery Company, say that this steel is equal or superior to Damascus sword steel, and is the result of years of investigation and experimenting.

In addition to the high-grade blades, they are making novelty handles for these knives which presents an attractive agency proposition to carpenters and builders. The handle can be fitted with photographs, names, lodge emblems, or any other design.

A card addressed to them at Canton, Ohio, will bring the details of the proposition that they are offering to carpenters and builders.



Combination Knife with Novelty Handle Made by Canton Cutlery Co.

Handling Engines for Profits

The men who are out on the job often have an opportunity to find out whether other builders and contractors are in need of an engine and they often see conditions where an engine would save other men considerable money. In this way the contractor has a chance to put over a selling talk that the man, less familiar with instances, does not have.

The Manufacturers' Engine Company are offering an agency proposition that should present a good opportunity to the man who is wide awake and familiar with building conditions in his territory.

The engine they are making is suitable for gasoline, kerosene, or gas. It is of the valve-in-head type such as has been so successful in automobiles. They say that their engine is made to prove a pulling capacity of 30 to 50 per cent overload. This will give more power to the man that is inclined to buy an engine a little too small for the purpose.

Men who are interested in this proposition can get all the necessary information from this company by writing to their address, 1629 Crystal Ave., Kansas City, Mo.



The Syracuse Twist Drill Bit for Wood

Altho first marketed in 1877, there are many carpenters who do not know the merits and advantages of the Syracuse twist drill bit for wood. Instead of being made by cutting flutes around the body in a milling machine, this drill is forged straight in one piece under power hammers and twisted hot to form the spirals. The grain of the steel is unbroken, thus following the twist and, being compacted in the process of forging, is stronger and tougher than if milled.

The Syracuse twist drill bit has stood the test for



Syracuse Twist Drill.

nearly 40 years. Its makers, the Syracuse Twist Drill Co., Syracuse, N. Y., claim it to be the best for carpenters, cabinet and wagon makers for the following reasons: It is made of high grade tool steel; it is hammer refined and oil tempered to impart strength and toughness; it is accurate and numbered by 32nds and 64ths, giving a size for every use; it can be sharpened upon a grindstone when dulled by service. Having no worm, its boring speed may be suited to the toughness of the wood. It is not injured by accidental contact with nails and screws. It will enlarge a hole without plugging.



Plenty of Power at Low Cost

Operating a power plant at a fuel cost of but a trifle more than half a cent per hour per horse-power is "going some," but it is being done and done successfully by hundreds of power users all over the country.

This remarkable achievement in power economy has been made possible by the production of a type of engine that develops power on cheap kerosene instead of on higher priced gasoline.

The Ellis Engine Company, 2840 E. Grand Boulevard, Detroit, Mich., are building engines of this type in various sizes, from 1½ to 18 h.p., and have demonstrated beyond question that they are extremely practical and have many advantages.

The Ellis line is equipped with an ingenious patent throttle for adjustable speed control, which virtually gives three engines in one. Another feature worthy of special note is the portability of these engines. In proportion to power they are wonderfully light in weight, yet unusually strong and sturdy.

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TIME lost through delayed deliveries of material cuts into the profits you had **estimated**. Your men wait doing time-filling jobs; your **expenses** run on. **Don't** be held up. Have **everything** delivered right on the spot **before** you start work. Buy it **all** from Gordon-Van Tine at "**direct-to-builder**" prices. Save money at **both** ends—get your material at **rock-bottom** figures and **abolish** broken time. We can give you **perfect** service on

A Whole House, Or Any Part of a House—Wholesale!

You can make money by having our Contractors' Service Bureau working for **you**. It is already increasing profits for over **10,000 other Carpenters and Builders in every State**. It is furnishing **free** "Guaranteed Right Estimates." It is assuring **prompt deliveries, cutting out lost time and labor costs**. It is **drawing plans** for them—far cheaper than local architects could. And it is doing a hundred and one other things. Make the Gordon-Van Tine Expert Service Department work for you. You will find we sell

Everything Standard Quality — All Shipped Anywhere — Safe, Prompt Delivery and Satisfaction or Money Back!

Buy on our wholesale "**mill-to-you**" prices. It is profitable for you to pay about **3½% for freight** and to **save 25% to 50% on your bill**. You are the **sole judge** of quality. Everything new and in latest designs. Hundreds of special patterns of millwork ready for immediate delivery—the kind of work your local yard takes from one to three weeks to turn out. Over **95%** of our orders are shipped same day order reaches us.

Get This Book of 5000 Building Material Bargains FREE!

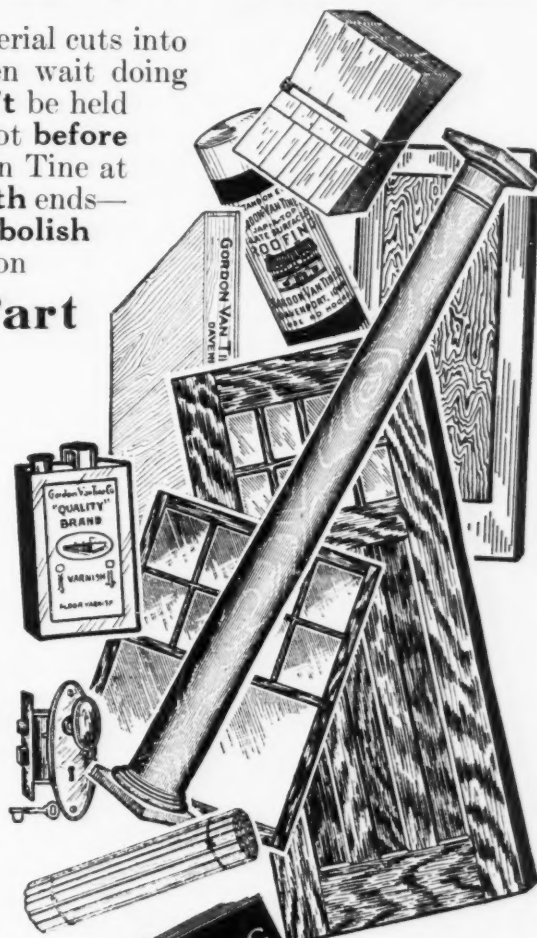
This book is a **money-saver** for over **100,000 regular, satisfied customers** throughout America! Packed from cover to cover with bargains. **Everything you need for building or remodeling**. Lumber, Millwork, Builders Hardware, Glass, Paints, Roofing, Wall Board, Doors, Windows, Screens, Porches, Moulding, Storm Sash, Stair Work, Flooring, Shingles, Nails, Enamels, Varnishes and **over 5000 other tremendous money savers**. Costs you nothing to get this great book. Yours **free** for the asking. Send us the coupon with your name and address and we will send your copy to you **at once**.

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☐ Building Material ☐ Lumber, Millwork, Hardware, Paints, etc. ☐ Plan Book

Name.....

Address.....

Occupation.....

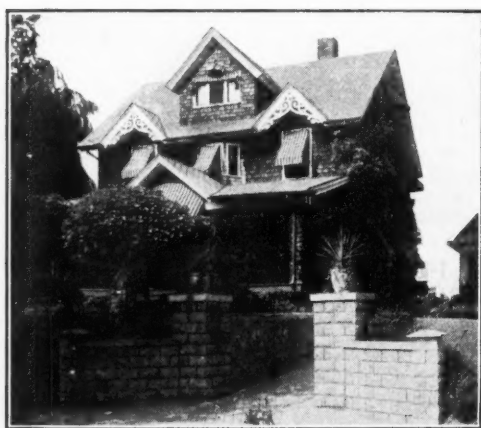


JOHNS-MANVILLE SERVICE



JOHNS-MANVILLE Service to the Builder is a personal service. The actual, personal co-operation of J-M representatives is always available, no matter in what corner of this continent you are located. Forty-eight J-M Branches of the Johns-Manville Company in as many leading cities of the United States and Canada bring J-M Service directly to your office. It is the function of J-M Service

J-M Transite Asbestos Shingles are not expensive—They are cheaper than slate or tile



*Residence of Louis Stern, Brooklyn, N. Y.
C. Schubert, Architect.
J-M Transite Asbestos Shingles.*

When you suggest J-M Transite Asbestos Shingles, you offer your client a reliable, fire-retardant roof at a low cost—a roof that possesses artistic qualities with a degree of fire proofness no less than slate.

And at the same time, one much lighter in weight. J-M Transite Asbestos Shingles may be laid on rafters designed for light wooden shingles.

Moreover, they never deteriorate, because the action of the elements only toughens and improves them.

They are supplied in a variety of colors. They can be stained any desired tint, and come in all shapes and sizes, rough and smooth edges and in two thicknesses.

Easy to apply and offer a good profit to the builder and permanent satisfaction to your client.

J-M Transite Asbestos Shingles are

examined, approved and labeled by the Underwriters Laboratories, Inc., under the direction of the National Board of Fire Underwriters. Laid American Method, they are given class "B" rating. Laid French Method, they are given class "C" rating.

Write for literature.

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J-M Drinking Water System
J-M Transite Asbestos Wood
J-M Asbestos Stucco and Plaster
J-M Asbestos and Vitribestos Theatre Curtains
J-M Architectural Acoustics
J-M Waterproofing Materials, Mastic Flooring.
J-M Asbestos Pipe Covering and Sheets
J-M Zero Pipe Covering

J-M Anti-Sweat Pipe Covering
J-M Sectional Underground Conduit "Noark"
Enclosed Fuse Devices
J-M Corrugated Asbestos Roofing
J-M Regal Roofing
J-M Asbestos Slater's Felt
J-M Keystone Hair Insulator

J-M Sound Deadening Felts
Cold Storage Insulation
J-M Weatherite Paper
J-M Asbestos Fire and Damp-proof Flooring
Felt
J-M Cork Floor Tiling
J-M Washerless Faucet
J-M Sanitor Drinking Fountain



TO THE BUILDING TRADE



Men stationed at these Branches to aid you in the working out of the many building problems where J-M Products can help you to build better and more profitably and satisfactorily.

J-M Responsibility stands back of all J-M Products and guarantees those products to yield full satisfaction the sort of satisfaction that reflects credit on you and enhances your reputation as a Builder.

J-M Keystone Hair Insulator makes for comfort and quiet. It absorbs sound.

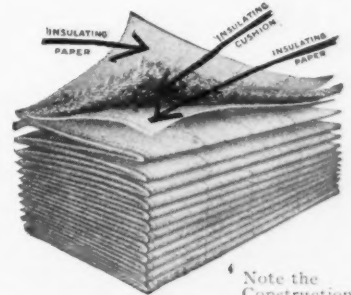
In buildings where localizing the noise nuisance is paramount, J-M Keystone Hair Insulator proves its worth and indispensability.

This perfect insulation is easy to apply and is a practical benefit and improvement to the apartment house, hotel, school, or in fact anywhere that reverberation is to be eliminated.

J-M Keystone Hair Insulator is made of chemically cleansed cattle hair loosely quilted between heavy paper. It is odorless and vermin-proof.

This material is equally efficient as a sheathing material, and is superior to building paper, for that purpose.

Its cost is small and its value is great. The J-M Catalog No. 102 fully explains its application and properties.



J-M Keystone

J-M Cold Water Paint resists fire, costs less and yields you a Bigger Profit.



Euclid Garage, 13th St., near Euclid Ave., Cleveland
"Largest in the World." J-M Fire-proof Cold Water Paint

Keeping shop and factory walls and ceilings painted improves light reflecting efficiency—cuts lighting costs and betters working conditions which promotes quality and quantity of employee's output. And painting is actually cheaper than cleaning the walls when J-M COLD WATER PAINT is used. There's a good profit for you in selling this paint, and another profit in applying it—by brush or spray. J-M Cold Water Paint resists fire, too—contains no oil—and spreads farther than oil paints. Endorsed by the Underwriters as a fire retardant. Mixed with water. Will not flake or rub off. Does not discolor. Backed by J-M Responsibility. *Write for data.*

H. W. JOHNS-MANVILLE CO.

Albany	Boston	Columbus	Duluth	Kansas City	Minneapolis	Philadelphia	St. Paul	Toledo
Atlanta	Buffalo	Dallas	Galveston	Los Angeles	Newark	Pittsburgh	Salt Lake City	Washington
Baltimore	Chicago	Dayton	Houghton	Louisville	New Orleans	Portland	San Francisco	Wilkes-Barre
Birmingham	Cincinnati	Denver	Houston	Memphis	New York	Rochester	Seattle	Youngstown
	Cleveland	Detroit	Indianapolis	Milwaukee	Omaha	St. Louis	Syracuse	

THE CANADIAN H. W. JOHNS-MANVILLE CO., LTD., Toronto, Winnipeg, Montreal, Vancouver.

360

PERMANENCE OF LUSTRE

Spells Satisfaction to the Owner

ARKANSAS SOFT PINE

Interior trim produces a finished surface of sustained "life."

Age will not dim the waxed, varnished or enameled surface when the wood underneath is Arkansas Soft Pine.

The fibre and texture of this material are such that a well-balanced absorption of the filler and pigment takes place at the time of application, and produces a perfect chemical adherence to the wood.

On this fixed surface the finishing coats are held permanently. The pine itself is free from pitch or resinous oils and will not cause discoloration from underneath.

We recommend personally conducted experiments in treating our finish and will gladly furnish, without cost, flat or edge grain samples in the natural for this purpose. Small set of stained samples may also be had for the asking. Fill out the coupon—a pencil will do.

Arkansas Soft Pine Bureau
Little Rock, Arkansas

ARKANSAS SOFT PINE BUREAU
Little Rock, Ark.

Gentlemen:—Please send me {stained
natural} samples without obligation on my part.

Name

Street No.

Town and State.

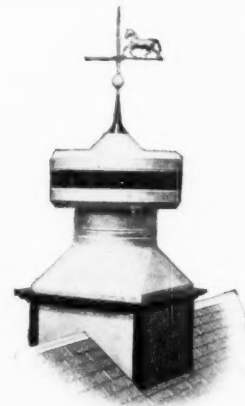
Northfield Aerdomes Mean Pure Air

No one who keeps stock can afford to have poorly ventilated barns. Ventilation in a dairy barn, for instance, marks the point between cows which barely pay for themselves and cows that yield a good margin of profit. In addition to adding to the health and profit-producing power of stock, ventilation protects the interior of the barn from rotting and rusting.

If a Northfield Aerdome of the proper size is put on a building the manufacturers guarantee that the building will be perfectly ventilated, due to the correct construction of the Aerdome. It cannot help but act because its operation depends on natural laws which never change. Its heavy, substantial construction will also add to the appearance of the building on which it is placed.

The Aerdome is shipped with the top and the base separate. Two strong bolts hold the parts solidly together and anchor the Aerdomes to the roof. The one piece base is very strong and needs no wooden filler to brace it.

Prices and details can be obtained from the Northfield Iron Company, 402 Nico Building, Northfield, Minn. They make the Aerdomes in all sizes and prices so that the carpenter who handles their work can accommodate customers of all kinds. They have some choice territory still open and offer an attractive proposition to carpenters.



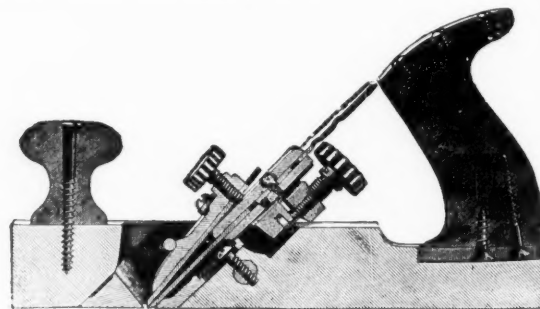
The Northfield Aerdome.



Gage Self-Setting Planes on Approval

The makers of the celebrated Self-Setting Plane at Vineland, N. J., Gage Tool Company, are sending introductory samples of a self-setting attachment for changing old-fashioned or grandfather planes into the Self-Setting Planes.

A little trimming in the old throat and inserting two wood screws, consuming 20 to 50 minutes, changes the old plane into the perfect Self-Setting Plane.



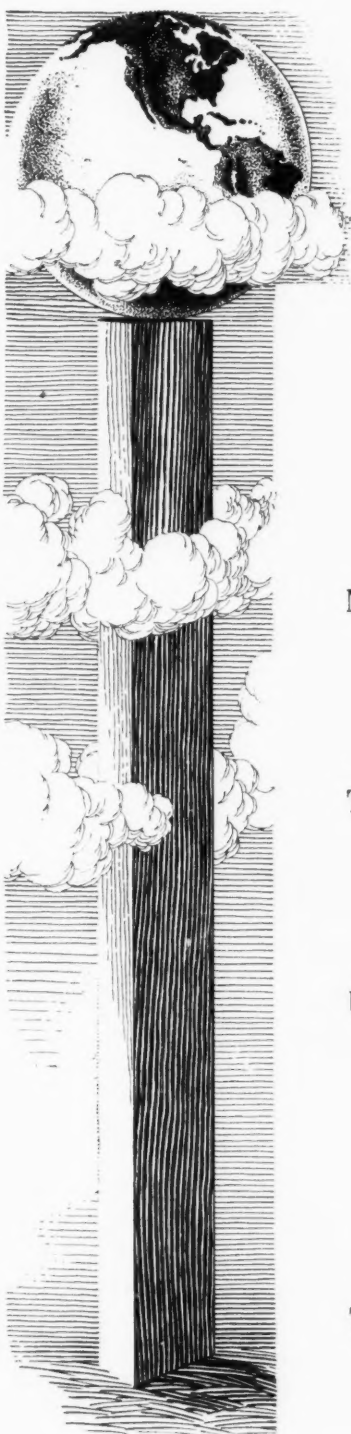
The Famous Gage Self-Setting Plane.

The Gage Tool Company are now adding improvements to the lowest angle Self-Setting Block Planes.

They have also started a C.O.D. campaign of sending their Self-Setting Planes or S.S. attachments on trial to whomever wants them where not already introduced, with the privilege of return at the expense of the company; if not wanted, so that the trial will thus be absolutely without cost to the plane user.

Here is a rare chance for those who live where Self-Setting Planes are not sold to get them on trial and without expense, if, after trial, they are not wanted.

A postal to the Gage Tool Company, Vineland, N. J., will bring full information.



GETTING WHAT YOU SPECIFY—

Every Architect and Structural Engineer Knows the superlative qualities of sound, dependable Southern Yellow Pine used as beams, studding, sills, sleepers, joists, girders, trusses, columns,—in heavy construction of every character.

No Other Material combines in such a happy degree and in such perfect proportion the properties of cross-breaking strength, resistance to impact, strength under compression, and resistance to shear.

The Only Instances where Southern Yellow Pine timbers have failed under legitimate maximum working stresses have been where inferior grades of material have been substituted for material specified.

Under the New Rules for standardizing sizes and grades in Southern Yellow Pine timbers, recently perfected and adopted by the Southern Pine Association, grading is reduced to an exact mathematical calculation and assured absolute dependability in quality. That means the complete elimination of future uncertainty in specifying Southern Yellow Pine for exacting use.

The Southern Pine Association's Manual of Standard Wood Construction, revised and enlarged, with new Grading Rules, Building Codes, Working Formulae, Effects of Creosoting, etc., is now in press and practically ready for delivery. Send for your copy.



SOUTHERN PINE ASSOCIATION
NEW ORLEANS

"The Roof Distinctive"

Such is the title of a booklet that is being distributed by the Asphalt Shingle Publicity Bureau to show the many good points of asphalt shingles.

One of the features of asphalt shingles are the many colors in which they may be obtained. Almost any color scheme can be decided upon and a tint can be found that will harmonize to bring the scheme out at its best.

After the roof is put on it will resemble a handsome slate or flat tile roof. The coloring matter that is used is of mineral composition and is made a part of the shingle, so that it will be absolutely permanent and will not fade as an artificial coloring matter might. The color is generally obtained by imbedding in the hot asphalt surface a granular crushed stone or some such material. This gives a wearing surface in addition to creating a handsome color.

Details of the uses and varieties of asphalt shingles that can be obtained will be furnished on request by the Asphalt Shingle Publicity Bureau, 855 Marquette Building, Chicago, Ill.



New Huther Cutter Head

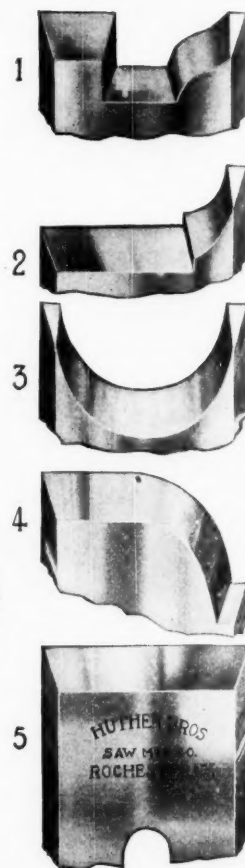
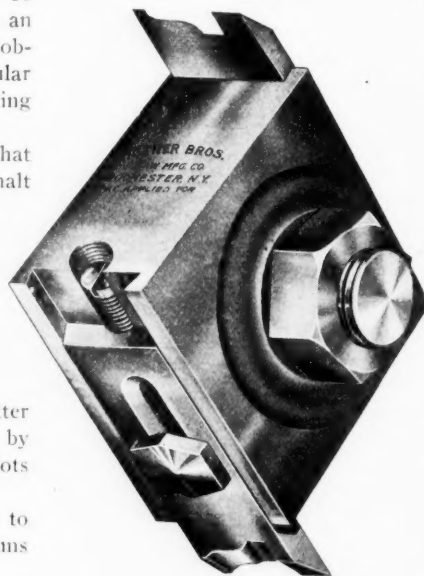
A Huther patent Cutter Head for joining and sticking mouldings on saw table, cutting windows, top treads, cove moulding and other uses is shown here. Any special shape knives will be furnished to order. This cutter head is made from solid steel and has an adjustment by headless set screws. The knives are held in dovetailed slots by hexagon head bolts.

This is an excellent head for the contractor who wishes to do work of this kind using his ordinary saw table. It runs a solid cutter and will turn out high quality work.

Huther Bros. Saw Mfg. Co., Rochester, N. Y., issue a

92-page illustrated catalog which contains descriptions of various cuts made with dado head and saws.

This book is just the right size to fit the pocket and is a handy little reference book. Huther Bros. will be glad to send one of these to any one who writes in. Send a post card—1101 University Ave., Rochester, N. Y.



Huther Cutter Head and Knives.

- - COME TO DETROIT - -

THE AUTOMOBILE CENTER

AND LEARN THE AUTOMOBILE BUSINESS

GUARANTEE

We guarantee to qualify you for a position as chauffeur, repairman, tester, salesman, demonstrator or garage man paying from \$75 to \$300 in a short time, or refund your money. We have constantly more requests for men at good salaries than we can supply.

Detroit trained men get preference over all others, get jobs quick as soon as ready. **Thereason—** study the heart in lower corner. Realize its tremendous power. No other city, no other school can give you what Detroit offers. Factories shown are not all. Think what it means to learn at Detroit. Every factory knows us, endorses our school, glad to get our graduates. You're right in the middle of great auto activity. Men are needed everywhere as testers, repairmen, chauffeurs. Splendid chance to start in business. Hundreds of our graduates are doing it.

Earn \$75.00 to \$300 A Month

We teach you to handle any auto proposition. Our equipment is complete. Students actually build new cars from start to finish, getting regular factory training in assembling, block-testing, road-testing, etc. That's the Detroit Way. All leading types of starting, lighting and ignition systems in operation. Learn to time motors, adjust carburetors, magnets, valves, bearings, etc. Six-cylinder Lozler touring car is used for Road instruction. We have a new 8-cylinder King chassis, and new Cole—the latest things out. "Just added 1916 Delco system, as used in Buick, Hudson and Packard."

DETROIT
THE HEART OF THE AUTOMOBILE INDUSTRY

DETROIT
THE AUTOMOBILE CENTER OF THE WORLD

Great Demand for Detroit Trained Men

Garages throughout the country write us for men. Why not fit yourself for one of these good paying positions? W.C. Garden, Tenn., is chauffeur at \$25 a week and expenses. E. Livingston is head of government garage at Toronto. Hundreds of others in good paying positions. Demand greater than supply for competent men. Following clipped from Daily Papers—All parts of U. S.

Experienced motor mechanics, bearing scrapers, assemblers, repairmen, good wages. Henderson Motorcycle Co., 1158 Cass.

10 road testers, 20 garage repairmen, final assemblers. Maxwell Motor Co., Inc., Oakland Ave. plant.

Write for full particulars. Ask for "Auto School News." They're free. Or better still, jump on a train and come to Detroit.

MICHIGAN STATE AUTO SCHOOL

2012 Auto Bldg., 11-19 Selden Ave. DETROIT, MICH.

CUT OUT THIS COUPON AND CHECK THE SPACE YOU WANT

Mr. A. G. Zeller, Mgr., 2012 Michigan State Auto School, Detroit.

Send me your new pictorial catalog and Auto School News, free. I will let you know later what I decide to do.

I will leave for Detroit about.....

Name.....

Address.....



DOORWAY,
ISAAC ROYALL HOUSE
at Medford, Massachusetts.
Built of White Pine in 1732.

While the Royall House as it now stands was built in 1732, a section of it—which was originally the Winthrop Farm House—was built in 1631. This is the oldest section of any house now standing in this country.

CARPENTERS, lumber men and architects have for generations agreed that no other wood gives such long and satisfactory service, when exposed to the weather, as

WHITE PINE

Despite an impression that it is scarce there is still plenty of "Good Old White Pine," in all grades, and it can be purchased in all markets at reasonable prices, when considering its value as a structural wood.

If the lumber dealers supplying the materials for those for whom you are building are at any time unable to furnish it, we would appreciate the opportunity of being helpful to you in securing it.

A FREE MAGAZINE FOR CONTRACTORS

We are now publishing a bi-monthly architectural magazine, every issue of which will be full of valuable and helpful information for contractors and builders. If you would like this magazine, write us and we will be pleased to place your name on our mailing list.

Representing
The Northern Pine Manufacturers'
Association of Minnesota, Wisconsin
and Michigan, and The Associated
White Pine Manufacturers of Idaho

*Address, WHITE PINE BUREAU,
2235 Merchants Bank Building, St. Paul, Minn.*



North Carolina Pine is invaluable for interior treatments—beamed ceilings, paneled walls, built-in bookcases, etc.

Forms a Perfect Base for Paint

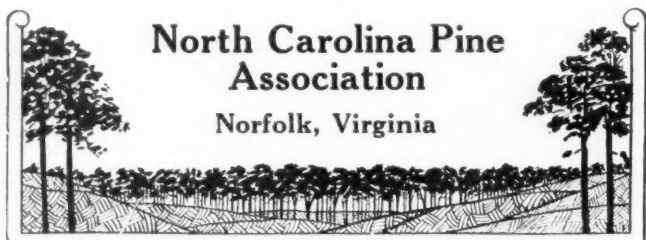
North Carolina Pine contains very little resinous matter. For this reason it takes and holds paints, stains and varnishes better than any wood of its kind on the market.

Its perfect base for paint makes it exceptionally valuable for interior work. The constant demand for interior ornamentation in varnishes and stains, and especially enamel, can be met with North Carolina Pine.

Architects' and Builders' Reference Book FREE

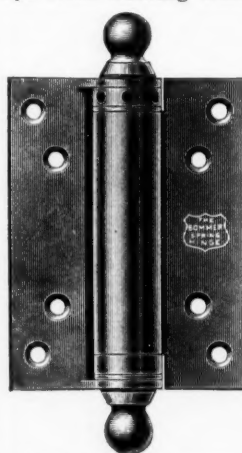
Write for Architects' Reference Book, prepared in convenient form for filing. Describes the many uses of North Carolina Pine and the beautiful effects obtainable.

Specimen panels on request.



New Improved Bommer Double Action Spring Butt Hinge

Bommer double-acting hinges are technically correct double-acting spring butt hinges. They have the weight-supporting bearings located to relieve both adjustable spring-holders from supporting the weight of the door, enabling both coil springs to respond freely and evenly in the barrels of the hinge when the door is opened in either direction, increasing durability and decreasing the breakage of springs. The pintle, flange and washer are interlocked, which prevents the ball tips from working loose, and confines the wear at the bear-



Single Action Bommer Hinge.



Double Action Bommer Hinge.

ings to steel washers which are easily replaceable. By this construction the durability of the hinge becomes practically unlimited and unequal wear of the barrel-ends is eliminated. They are made of wrought steel, bronze and brass, in all finishes, and have steel bearings thruout.

Bommer Brothers, of Brooklyn, N. Y., have been awarded the Gold Medal of Honor at the Panama-Pacific International Exposition for superiority of construction of their Bommer spring hinges.



New Catalog of Buffalo Wire Works Co., A Reference Book As Well As a Catalog

On January 1 the new catalog known as Catalog No. 8 of the Buffalo Wire Works Company will be ready for distribution.

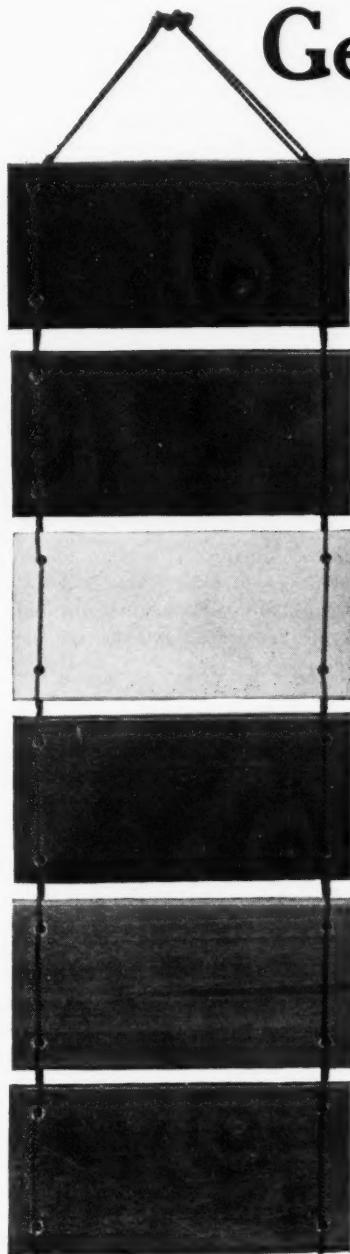
This book contains valuable tables of various kinds that are used every day by the most of the business people from the largest to the smallest, and principally by those who have use for or handle any of the articles which the above concern manufactures, such as wire cloth for screening purposes; protection of windows, lathing and for many other purposes; also wire work, such as desk railings, counter guards, office partitions, machinery guards, and window guards; ornamental iron work, such as elevator enclosures, elevator cabs, door grills and many other articles too numerous to mention in this space.

This company has been manufacturing wire cloth, wire work and ornamental iron work for the past half century, and their up-to-date factory, with the latest improved machinery, has its headquarters located at No. 413 Terrace, Buffalo, N. Y., and its branches thruout the country, the latest branch being opened at No. 11 South Seventh Street, Philadelphia, on August 1, enabling them to care for their customers' wants in the best workmanlike manner and executed in the shortest possible time.

The above catalog will be forwarded to those interested and inquiring for same on their business stationery or business cards by addressing the main office of the Buffalo Wire Works Co., 413 Terrace, Buffalo, N. Y.

In this day of genuine things there
is a growing demand for

Genuine Birch Interiors



Because of the **Beauty, Durability and Low Cost of Birch Trim** it is being employed in all manner of structures, from the homelike cottage to the palatial hotel.

The foremost architects and builders of the country now are employing **Birch as Birch** instead of using it as a substitute for an imported wood of less beauty and practical value.

Some of the best work of the leading architects of America is fully illustrated in our revised publication, **Birch Book-C**, which also contains much general information of value. Send today for your **FREE** copy.

Nothing will be of so much direct, personal value to you, nothing will do more to make you sure of what you want than a **full set of Finished Birch Samples**, including the new and wonderful Silver Gray.

A set will be **mailed without charge** to all who write immediately and give us an outline of the work they have in view.

These samples are invaluable to all directly interested in building.

*Give Us an Opportunity to Co-operate
Write Today!*

Northern Hemlock and Hardwood Manufacturers' Association

Oshkosh,

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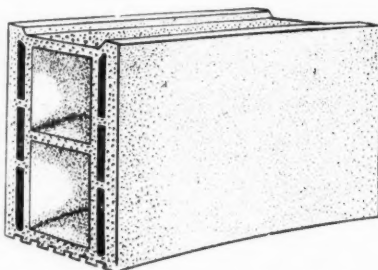
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Wisconsin

Glazed Tile Silo Block

The two really vital features of the first-class modern silo are the main wall material and the door construction. While putting out both the wood stave and tile block silos, the Kalamazoo Tank & Silo Company of Kalamazoo, Mich., are featuring their glazed tile, double wall block silo in an early-in-year sales campaign, the idea being that before the spring work opens on the farm the tile can be hauled from the station at convenience and erected by home labor, when that home labor is most plentiful and cheap. The tile is shipped direct from the nearest of a chain of kilns and money is saved the silo buyer by the saving effected in not having to store the tile with consequent numerous handlings and breakage.



Kalamazoo Glazed Tile Silo Block.

The detail construction of the Kalamazoo tile block is shown in the sketch and the Kalamazoo people emphasize the superiority of their glazed both sides tile over the common cement or tile block. The Kalamazoo keeps moisture in and frost and moisture out. The mortar enters the open spaces at the ends, thus keying the blocks solidly together, making absolutely airtight construction, reinforced by galvanized peened hoops, sufficient to withstand all internal strain, and carrying ample margin of safety as well.

The fact that many silo makers thruout the country equip their product with the famous patented Kalamazoo door

construction, placing yearly orders for the improvement proves the reliability of the "Kalamazoo." It is a continuous opening, all steel, hot galvanized door frame and door construction. The series of 30-inch, everlasting Redwood doors are sealed snugly against a felt gasket by malleable iron cam latches, which form a safe and convenient ladder the entire height of the silo.

The Kalamazoo early-in-year sales plan is a step in the direction of equalizing monthly sales so that twelve months' business does not have to be jammed into two or three, with consequent unsatisfactory conditions arising therefrom.



Lane's New Garage Hardware

Lane Bros. Co. are putting on the market several types or arrangements for operating sliding garage doors where the space is limited, yet it is necessary to move the doors easily and to close the opening perfectly tight against winter weather.

There are many situations constantly developing in the construction of modern garages where the plain old fashioned swinging or sliding door is most inconvenient if not quite impossible.

In such cases one or another of the plans the Lanes have developed will almost surely meet the required conditions. In the closed position any of these doors may be held snugly against the sills, jambs, etc., by the ordinary methods as with swinging doors and thus be kept equally weather tight, and each one of these outfits will be found satisfactory to practical application and operation.

The doors may be opened outwardly, leaving all the space clear within, or they may be kept entirely inside the building and in the open position stand back against the side wall. The dotted line shows the required clearance for operating.



THE BEST ROOF FOR PUBLIC BUILDINGS

is a good Tin roof—and this is equally true for residences and other classes of buildings. The Home for Aged Women, Boston, shown in illustration at left, was covered with MF Roofing Tin over forty years ago. The School Building at Jersey City was roofed with MF fifteen years ago. Excellent service has resulted.

SPECIFY COPPER BEARING OPEN HEARTH



C.B. OPEN HEARTH
32 POUNDS COATING

Roofing Tin

Highest quality Roofing Tin manufactured—and it lasts. Demand roofing plates that bear the stamp "C. B. OPEN HEARTH" in addition to brand and weight of coating. It insures a roof of service and satisfaction. We also manufacture Apollo-Keystone Copper Bearing Galvanized Sheets—unequaled for all forms of exposed sheet metal work. Send for booklet.

American Sheet and Tin Plate Company

GENERAL OFFICES: Frick Building, PITTSBURGH, PA.

DISTRICT SALES OFFICES:

Chicago Cincinnati Denver Detroit New Orleans New York Philadelphia Pittsburgh St. Louis
Export Representatives: UNITED STATES STEEL PRODUCTS COMPANY, New York City
Pacific Coast Representatives: UNITED STATES STEEL PRODUCTS COMPANY, San Francisco, Los Angeles, Portland, Seattle



LUMBER

It Tickles Your Customer



K. M. Roti
Contractor and Builder
Plans and Estimates Furnished on Short Notice

Waterview, South Dakota.

Sep 18 1915

Hewitt-Lea-Funck Co.,
Seattle, Wash.

Gentlemen;

I just unloaded the car of
lumber #200611 6 M. & P. S. which you
shipped to Inwood, Ia. The freight
amounted to \$184.60 which I paid. The
balance of \$307.94 I have instructed
our Fairview State Bank to send you
at once together with receipted freight
bill.

I am highly pleased with the quality
of the material, also my client is
very well pleased. The quantity
checked correctly with your invoice.

Yours respy
K. M. Roti
y. a. r.



Clip and Mail Coupon Today



HEWITT-LEA-FUNCK CO.,
1608 H-L-F Building, Sumner, Wash.

Gentlemen—Please send me the following:

- | | |
|--|--|
| <input type="checkbox"/> Barn Builder's Guide (four cents) | <input type="checkbox"/> H-L-F Plan Book (ten cents) |
| <input type="checkbox"/> Delivered, freight-paid price on enclosed list of materials (no charge for quotation) | <input type="checkbox"/> Millwork Catalog (free) |
| | <input type="checkbox"/> H-L-F House Pricer (free) |

Name

Post Office State

R. F. D.

This coupon puts you in touch with H-L-F Build Warm Construction—better than back plaster, costs less, and tickles your customer every time.



A Good Business for one man

What we are looking for is not a man out of a job, but a man who wants to get out of a job to start a business.

We want the best—not necessarily the biggest concrete or cement man in your neighborhood, willing to back his own judgment by investing from \$150 to \$5,000 in his equipment.

On this investment he should, after a few months of good preliminary work, earn not less than 10% a month profit, which rate should not only remain steady, but steadily increase.

The Norwalk proposition is neither a "sure thing" or a get-rich-quick game. For the man willing to work hard enough and invest money enough to get a fair start, it will give bigger and more certain returns than any other legitimate business we ever heard of.

It is neither a theory nor an experiment, but a tried out and tremendously profitable manufacturing line for a practical man with imagination and enterprise enough to crave something bigger than the rather crowded opportunities to be found in the regular cement line.

Our eight years' experience has shown that two kinds of men are most successful with the Norwalk Vault proposition:

(a) The man already doing well, whose business, however, is not developing rapidly enough to suit him or has slow seasons at one time or another.

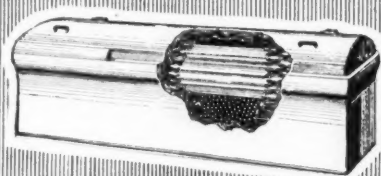
(b) The man who wants to get into business for himself, but has so far seen nothing really worth his while.

One-third the good territory of the United States is gone. So if the proposition appeals to you at all, don't pass it by because it is new. If you think you might be interested, ask us anything you want to know—no obligation on your part whatever.

The Norwalk Vault Company

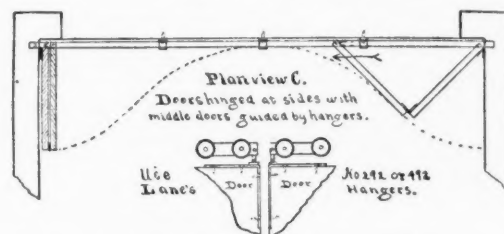
40 Seminary Street

NORWALK, OHIO



Note how much less than for swinging doors.

One feature that should be of particular interest to merchants is the fact that in each case the tracks and brackets are Lane's Standard Trolley goods, the same as commonly



One of the Plans for Hanging Garage Doors with Lane Hardware.

used for barn doors and the like, while the hangers for plans "A" and "B" are also a regular barn door type and to this extent no special stock is necessary.

The New feature just brought out is the No. 292 Hanger, which obviates all difficulties because the wheels do not project beyond the swivel. It is equally applicable to plans where there are double doors and but a single track across the front.

This outfit has also been used for a series of openings or stalls along one wall of a building by securing the side tracks to overhead supports.

On account of the ease and simplicity of erection and its great adaptability to various conditions, a large sale is anticipated on the No. 292 type of hanger.

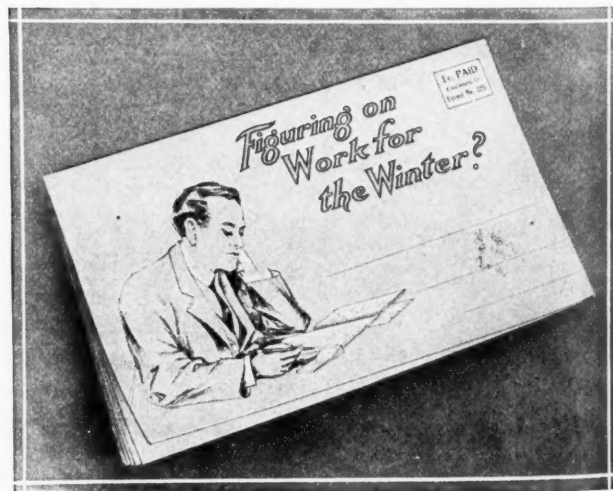
The manufacturers, Lane Brothers Company, Poughkeepsie, N. Y., will gladly send illustrated circulars on request.



Wallboard for Winter Work Booklet

One of the most interesting and comprehensive articles on winter work for the carpenter is contained in a booklet just off the press and now ready for free distribution among our readers.

The subject matter of the article treats entirely of the various and manifold uses of Wallboard by the carpenter



Send for This New Wall Board Booklet.

for new work as well as alterations and repair work that can be carried on in the winter season.

The article is written by one well versed in his subject and should be of great interest to all of our carpenter and contractor readers who are interested in solving the problem of the idle period during the winter.

The booklet is published by the Philip Carey Company, 1021 Wayne Avenue, Lockland, Cincinnati, Ohio.

We are advised that they will be pleased to send it to any of our readers on request.

Going to Build? Remodel or Repair?

Save \$5 to \$500 on Every Order for Building Material



For \$1000

We will furnish all material, except masonry, to build this 8-room house. Plans free.



For \$895

We will furnish all material, except masonry, to build this 8-room house. Plans free.



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We will furnish all material, except masonry, to build this 6-room house. Plans free.



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We will furnish all material, except masonry, to build this 7-room house. Plans free.



For \$740

We will furnish all material, except masonry, to build this 6-room house. Plans free.

BUY your lumber and millwork direct. Every contractor, carpenter and builder should have our big free catalog of building material—the book of *8000 price bargains*. A copy is ready and waiting for you and will be sent free, postage prepaid, at your request. *The tremendous saving* afforded by our method of supplying building material direct to the actual builder has proven a boon to thousands. Let us show you how to make more money by saving more money.

H. W. Mungis
President



Everything in Building Material

is described in this big book. It quotes low, net, rock bottom prices for lumber, flooring, roofing, doors, windows, interior trimmings, cabinet work, colonnades, porchwork, hardware, tile, paints, wallboard, metal work, plumbing and heating equipment, cement machinery, water supply outfits and thousands of building specialties. It is a handy book of information and reference that no builder can afford to be without.

Free Architect's Blue Prints

You do not need to have costly plans prepared by high-priced architects, thus adding to the cost of building, because we have had just such plans prepared for us by some of the ablest licensed architects in the country. These plans are complete in every detail and include a full set of specifications. Our **FREE PLAN BOOK** tells how to secure these plans without one cent of cost to you. A contractor will find this book of the utmost assistance in securing new trade because with it he can show his customers newer and better designs that may be built for less money.

Houses of Standard Construction

These buildings are of standard construction. They are built from high-grade guaranteed material with all cutting and fitting done by the carpenter on the job. They are not "ready-cut," "factory built" or freak houses in any sense of the term, but are erected as any house must be put up to secure best and most lasting results. Practical builders will readily appreciate the importance of this feature. It means more work for them and a better and less expensive building for their client.

Two Big Free Books

We want every carpenter, contractor and builder to have a copy of our big, free catalog, whether or not he is now in need of building material. It will keep him in touch with the very lowest prevailing prices and prove an invaluable guide to right buying. "Plan Book of Modern Homes" is filled from cover to cover with designs of convenient bungalows, handsome suburban residences, town houses, practical country homes and barns. Write for either or both these books today. Both are free. A postal request will bring them by return mail, or fill out the coupon below.

CHICAGO MILLWORK SUPPLY CO.
AMERICA'S GREATEST SASH AND DOOR HOUSE

1422 W. 37th St., Chicago

Write for Estimate

Send us your lumber and millwork bill for our *free estimate*. Let us quote prices including all freight charges direct to your railroad station, so that you can tell in actual dollars and cents what we can save for you on your present requirements. This service is **FREE**.

COUPON

Date _____

Chicago Millwork Supply Co., 1422 W. 37th St., Chicago

Gentlemen: Please send your **FREE** Books listed below to

Name _____

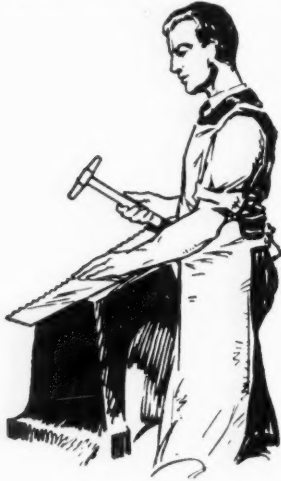
Address _____

Catalog No. 1422, of Building Material
Plan Book No. 1422, House and Barn Plans

The Road to Success

The little old town of Bristol, Conn., was one of those quaint, interesting New England villages that somehow inspire us with thoughts of sturdy manhood.

In the outskirts of Bristol, we find the first American Atkins Saw Plant, then operated by the third generation of the Atkins family. Bringing their skill and craft from far-off England, the family was among the first to establish itself in its old industry in this new land of promise.



At the Saw Anvil.

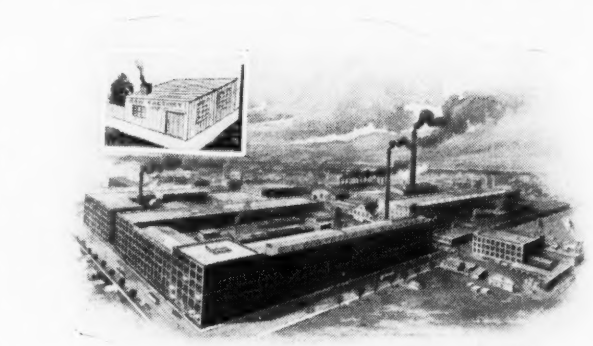
At the "bench" or anvil we find young Elias Atkins, in 1846, hammering away at his task, but with thoughts afar off, his blood boiling for adventure and his soul filled with an unconquerable desire to achieve.

Here he was in a field already occupied. Out there was the broad and fruitful West, with its thousands of miles of virgin forests, all to be felled, cut into lengths and fit for the builder's use.

Then came the last farewell to the loving mother and clinging girl-wife, the last good-bye and parting look at the old familiar sights of dear old

Bristol, and our boy was gone to cast his lot among the many uncertainties, in the wilds of Indiana.

There were no Pullmans, or dining cars, or "Twentieth Century Limited" trains in those days. Much of the jour-



Then and Now at the Atkins Factory.

ney was made by stage-coach, and the days were long and the nights seemed never-ending. But the young pioneer pushed forward, constantly forward, towards the setting sun, until at last he reached the small village that was or is known as Indianapolis, at that time only a government trading post on the National Road running from Washington to St. Louis.

Here among the rugged oaks and monster hardwoods, our young sawmaker was made welcome.

The starting of a business enterprise in those days was far different from the present. There could be no heavy initial investment, because there was no money to invest. There could be no large buildings with complicated machinery, because no buildings or machinery existed, for that purpose, at the time.

Just a shed and an anvil and a hammer and a few tools were all; but there were sturdy manhood, determination and

What Would Happen If You Recommended a Wall Board That Shrunk So Badly It Pulled From the Nails?

Your reputation is at stake on every job, and you can't afford to use a wall board that will shrink, warp and buckle.

Your customers depend on your judgment in selecting materials and your skill in applying them, so you handicap yourself and "get in bad" if you buy wall boards on price alone.

WATERPROOF PLASTERGON WALL-BOARD

In addition to **Waterproof Plastergon** being harder and stiffer than other boards, it is also more waterproof and more perfectly sized for painting. One or two coats of any flat wall paint on **Waterproof Plastergon** without further sizing produce an effect equal to three or four coats on other boards.

No Asphalt to Gum Up Saws.
No Wood Cores to Raise the Price.
No Dark, Foul Smelling Paper Stock.

Just good, pure, Northern Spruce Fibre chemically waterproofed and sized.

Look into the situation. A generous sample with instructions for testing will be mailed to everyone who writes and we'll quote a price on **Waterproof Plastergon** that sets a new standard. Just mail a card today.

Plastergon Wall Board Company
101 Fillmore Ave., Tonawanda, N. Y.

FIBREWEB



Interior of Home Constructed of FIBREWEB

Mr. Contractor and Mr. Builder—Let FIBREWEB help you solve that building problem by utilizing the latest improved moisture proof fibre wall board.

FIBREWEB is exactly what its name implies—a closely woven and compact, formed wall board every fibre of which is treated in the pulp form to withstand moisture.

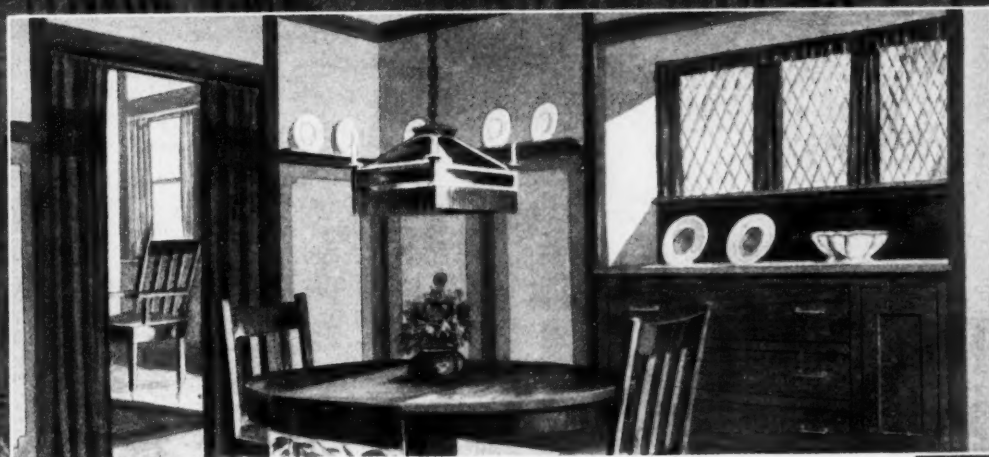
Replace the old, unsanitary lath and plaster construction with the modern FIBREWEBBING process.

Ask us about it.

The Fibreweb Co.

Department A - - - Marion, Indiana

Rock Board



The Real WALL BOARD from Rockford

When introducing Rock Board to the Public we realized that to bring it into universal use, it would have to be the superior of anything on the market.

ROCK BOARD is Popular with You Builders for these Good Reasons—

It is heavy, and very strong, making it exceptionally easy to handle, being nailed directly to the studding. No skill necessary to put up, a fine saw and hammer are the only tools needed. Cuts to any size, eliminating waste.

Rock Board is ready for decoration as soon as it is nailed to the studding and can be painted the same as wood or artistically stenciled. Rock Board is an ideal insulator, deadens sound, makes a house warmer in winter and cooler in summer. Withstands shocks, strains and vibrations that crack and ruin plaster walls and ceilings. "Hard as Rock and as durable."

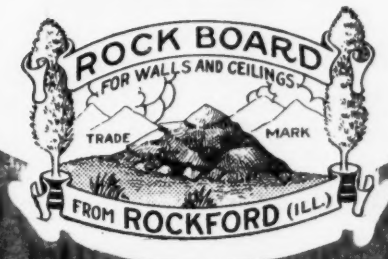
Rock Board has no equal for a low-cost efficient way of partitioning, offices, stores, factories, etc. Make some money this winter transforming barren attics into comfortable bed-rooms or do remodeling work with Rock Board.

Write for **FREE Samples**

and make your own comparisons—We'll be glad to send every Carpenter and Builder complete information together with Free Samples of ROCK BOARD from ROCKFORD.

Rockford Paper Box Board Co.

Rockford, Illinois





UTILITY BOARD Brings Winter Profits

NOW—when cold weather makes building work slow—try our Utility Board. Utility Board can be used for remodeling interiors, making new rooms of old attics, lining garages—for a hundred and one purposes.

Visit your customers and show them how Utility Board can be used to advantage in their homes. Show them the beautiful new grained wood finishes in plain oak, quartered oak, circassian walnut and mahogany as well as standard finish Utility Board. They will like Utility Board because it is so handsome in appearance; it won't chip or crack; and there is no muss or fuss in having it installed. You will like Utility Board because it is easy to put on and your profits are big.

And remember, it is never too cold to lay Utility Wall Board. That means comfortable, profitable employment for you even when it's 'way below zero. Write now for sample panels of Utility Board in all finishes. Sent without cost.

The Heppes Company

*Giant Flex-A-Tile Shingles
Standard Flex-A-Tile Shingles
No-Tar Asphalt Paint
Rubbertex Roll Roofing*

Other Guaranteed Heppes Products

4503 Fillmore St., Chicago, Ill.

an inborn and acquired knowledge of his profession there, which meant more for his future success than elaborate equipment and heavy investments would have done.

From his modest beginning in 1857 has grown the enormous enterprise of today.

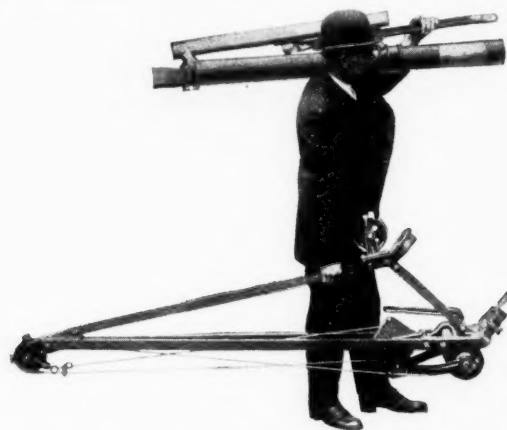
It is true that opportunity entered into the success in a marked degree; but of much more consequence has been the one underlying principle that has dominated the business from its inception, which has been the name of E. C. Atkins & Co. shall never be given to a saw or tool unless it has been made of the very finest material and built on the most scientific principles.



Builders' Derricks and Winches

Winches and derricks are most important parts of a contractor's equipment. They will often pay for themselves in the time and labor saved in handling material, both light and heavy, on the job.

The winch shown here is especially convenient and prac-



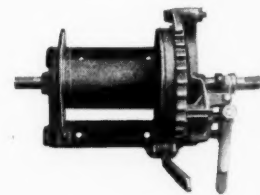
The Sasgen Derrick Folds Into Two Pieces for Carrying.

tical in construction work. This single drum, single shaft geared winch can be operated both direct and in gear from one shaft. The change from direct to compound can be made in an instant by one small lever. When light loads are being handled, the direct drive can be used with the resulting speed. When heavier loads are being handled, the gear

drive should be used. The other illustration shows the "Champion" all-steel derrick. This is light and portable and at the same time is capable of handling



Ready for Work.



Detail of Drum.

1,000 pounds. It folds up into two pieces so that it can be readily carried in an auto.

The Sasgen Derrick Company are the makers of this equipment. Their address is 2053 N. Racine Avenue, Chicago, Ill. Further particulars on their new winch and other types of equipment can be secured from them.

Give Yourself a Square Deal

This is the *first* announcement we have ever made to you carpenters on the firing line.

Up to *this* time we have been oversold on Upson Processed Board, all the time. But now with our big, new, *modern* factory—the most completely equipped wall board plant in the country—*now* that we can supply more board, we want you to know why you *ought* to use Upson Processed Board in preference to any other.

Of course you've heard about Upson Processed Board! You probably already know it as the *quality* board—the standardized board by which others are judged and compared.

IT may be that you are prejudiced against the use of any wall board—either had bad luck yourself with some punky board or heard of some brother carpenter having trouble. But *don't* put Upson Processed Board in the same class with *irresponsible*, warping, pulling boards.

Get it clear in your mind—Upson Processed Board is **DIFFERENT**. It is no more to be compared with other boards than hemlock is with oak.

Perhaps the boards you've used in the past were punky and mealy—perhaps you couldn't saw, cut or plane them—perhaps they were hard to handle because they were so brittle—and perhaps after you had done your best to get a good job, they curled and pulled, even in some cases ripped loose from the walls.

But you *never* heard of Upson Processed Board pulling from the wall or drinking gallons of paint because it was spongy or absorbent. No! You never heard of Upson Board giving very much trouble *anywhere*, because there isn't a "kick to a million feet"—a fact that we are willing to back by affidavit.

Now then, you believe in a square deal. You believe in having your customers buy building materials just as you buy lumber—**BY GRADE**.

You, yourself, wouldn't pay as much for a 5 and 10-cent store saw as you would for say a Simonds saw—you wouldn't recommend hemlock where you knew oak or cypress ought to be used. It is your policy to recommend products to your customers that will give satisfaction as well as reflect favorably upon your workmanship.

So, for your own good, you ought to know why Upson Board is better. In the first place, it is made of long, wiry, tough **PURE WOOD FIBRES**, **SCIENTIFICALLY PROCESSED**, and combined under the **UPSON** formula.

Then, every panel is carefully **PROCESSED** so that it is *pre-shrunk* or **KILN CURED**, like interior trim, to minimize



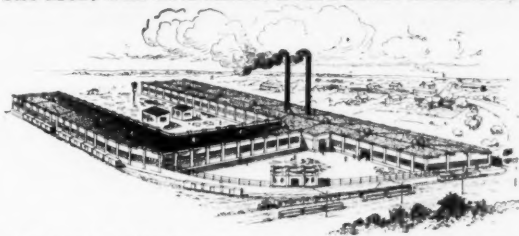
Interior finished in Upson Board—for client's Greatest Satisfaction

And Upson Processed Board is **DIFFERENT**. It is well called artificial lumber because it *looks* like lumber—*feels* like lumber—and *works* like lumber. You will feel more at home with it than with any other board.

UPSON-BOARD

PROCESSED

The Most **DEPENDABLE** Board Made in America



The Most Completely Equipped Wall Board Plant in America

contraction and expansion—**WATER-PROOFED** to resist the penetration of dampness and moisture—and **SURFACE FILLED** to give a perfect bond for paint.

The difference in cost between **DEPENDABLE** Upson Processed Board and cheap, punky, "jack pine" boards or dirty "chip" boards, is *less than a dollar* for the average room and that small difference is saved several times over in the lower cost of painting Upson Board. This is a point you ought to tell your customers about.

You want to know, too, that Upson Board cuts with a clean edge and planes smoothly. The stiff panels are more easily handled and there is no sticky tar to gum your saw and make you condemn wall boards.

And Upson Board is strong—stands more than 400 pounds pressure to the square inch. No pure wood fibre board on the market tests so strongly.

Scores of carpenters have told us they can apply a quarter more of Upson Board in a day than of any other wall board. That means economy in application for you.

Yes, you owe it to yourself to know about Upson Board. You will be delighted with it when you've used some and convinced yourself as to its dependability. You will find it better adapted to your work than other boards and we are willing to let you prove these statements yourself.

By all means use wall board—but use the **BEST** board. Upson Processed Board comes nearest to being the *perfect* wall and ceiling lining for every kind of building—new or old. It also offers a profitable little side line in making cabinets and other articles. In fact, it is almost as useful as lumber in every-day carpenter jobs.

Send today for your sample of this dependable wall board. Test or compare it with any other boards you may know.

You'll be interested in a mighty good plan we have for cooperating with carpenters who use Upson Processed Board. It makes work the year around and especially during winter months which are sometimes dull.

Write today for samples of this hard, stiff dependable wall board and our dollar making plan for carpenters and contractors.

**THE
UPSON
COMPANY**
26 Upson Point
Lockport, N. Y.

Send me large sample of Upson Board, descriptive literature and full particulars of your carpenter proposition.

Name.....

Address.....

LOOK AT THIS!



This 10 foot panel of Upson Board stands erect without a bend. **DEPENDABLE** Upson Processed Board turns easy handling and working for you. Will save you time and cost in applying and cutting.



THE UPSON COMPANY
Lockport, New York

Fibre Board
Authorities

LOOK FOR THE BLUE CENTER—TRADE-MARKED

Stock Terra Cotta

Of more than usual interest to architects, contractors and also the man who is planning to build, is the announcement by the Midland Terra Cotta Company on another page of this issue. Look carefully at the picture in their advertisement—you can see stack after stack of white enamel terra cotta ready to fill orders on short notice—all that it requires before loading on cars, is fitting it to your plan.

The beauty and richness of white enamel terra cotta combined with good taste in the architectural treatment assures snap and a distinctive quality to any building which cannot be equaled thru the use of any other materials. Such a building cannot fail to win the admiration of even the casual passer-by—a mighty good advertisement for the builder as well as the owner.

Their 1916 stock portfolio, which is supplementary to the previous yearly editions, will be ready for distribution after

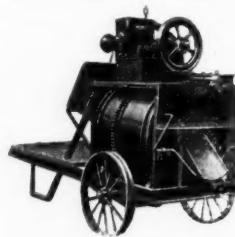


Chicago Business Block of Brick and Stock Terra Cotta.

the first of the new year. This portfolio contains sixteen plates serially numbered from 45 to 60, each plate containing many valuable suggestions on the use of stock terra cotta. Call or write the Midland Terra Cotta Company, 1515 Lumber Exchange Bldg., Chicago, for one. It is free to those interested.

Archer Special Concrete Mixer

The No. 1 Archer Special concrete mixer possesses the following distinctive advantages. It is an end discharge mixer, having a daily capacity of 40 to 70 cubic yards under



Archer Special.

ordinary working conditions. Being end discharge, it can be ended up to the forms to spout concrete directly into them without the necessity of wheeling the mixed material. It is an extremely portable machine. It can be easily lifted at the platform end and swung around to any position and can be moved around on the job or from one job to another with ease, a feature which is a large factor in effecting low building costs. For foundations, curbs and gutters, concrete roads or sidewalks the end-discharging principle has been demonstrated to possess many advantages. It can be worked in small narrow places or on narrow platforms where it would be impossible to even take side-discharging machines.

The mixer has a capacity of $4\frac{1}{2}$ cubic feet of wet concrete per batch or 6 to 7 cubic feet of dry. It takes one-half sack of cement for a 1:3:6 mix or a whole sack for a proportion of 1:2:4. The engine is rated at 3 horsepower but will develop $3\frac{1}{2}$ and is strong enough to drive the drum continuously, no matter how much material is crammed into it.



Easily Moved.

Many records from contractors show that this mixer will lay from 2,500 to 3,000 square feet of 6-inch sidewalk per day, mixing both top and bottom courses. One machine with eight men will lay 275 square yards of 7-inch concrete road per day, mixing top and bottom courses. On road work some contractors use two machines working side by side.

FREE

This Package of
Helpful Information on
Building



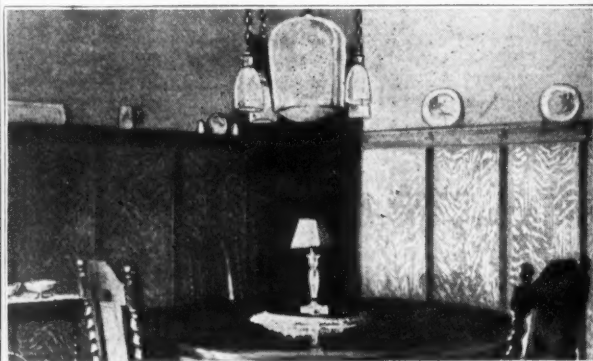
TO ALL
Carpenters and Builders

Every carpenter and builder who writes for samples of **Roberds' Ideal Wall Board**, will be given absolutely free a beautifully designed panel showing our boards in actual colors together with useful information which will be helpful to you in your daily work.

ROBERDS' IDEAL WALL BOARD

"The Guaranteed Moisture Proof Wall Board"

Don't delay—Write today for the **Free Package**—It's yours for the asking; also samples of our wall boards in gray, tan, mission and quarter-sawn oak.
THE ROBERDS MFG. CO., 100 Railroad Avenue, Marion, Ind.



Roberds' Oak Wall Board used in paneled dining room in residence of Arthur G. Wade, Oak Park, Ill.



Trademark Reg. No. 94745.

Is More Than a "Wall Board"

because it handles so easily, saws smooth and clean, does not warp, shrink, crack or break, always lies flat and straight. It is the ideal material for:

- lining garages and outdoor sheds for warmth.
- lining summer cottages (helps keep them cool).
- quick repair partitions.
- enclosing rooms in attic or cellar.
- building dust-proof closets and cabinets.
- panels in wainscoting or beamed ceiling.
- shelves, drawer bottoms, cabinet backs, and 1001 other purposes.

It's the center core of kiln-dried wood slats that makes **Compo-Board** so strong, durable and satisfactory in so many ways.

It's this same patented feature of construction that makes genuine **Compo-Board** so easily identified. Look for this wood core when you buy and avoid disappointment.

Sold by dealers everywhere in strips four feet wide and in lengths one to 18 feet long, as desired.

Write for interesting book and free sample piece.

Northwestern Compo-Board Company

5777 Lyndale Ave., No.
MINNEAPOLIS, MINN.

15 Salesmen Working For Me and More Coming



These salesmen are my customers — property owners — whose residences I have covered with NEPONSET Shingles. They are the biggest boosters of the shingle I know. They're turning business my way every week. There is no roof so attractive as that covered with

NEPONSET Shingles

PATENTED

Each shingle is specially built up—the butt end being three times thicker than the top end! When laid they form seven layers. That will give you some idea of their durability. Why not get a sample and investigate for *yourself*?

The same materials are used in **Neponset** Shingles as in the well known **PAROID** Roofing, also used in **Neponset** Proslate, the highest grade colored ready roofing ever made. **Neponset** Wall Board, **Neponset** Waterproof Building Paper and **Neponset** Floor Covering are other well known **Neponset** products.

Bird & Son, Department C, East Walpole, Mass.

Please send me a sample of the NEPONSET Shingle. This does not obligate me in any way whatever. Also send copy of your booklet "Repairing and Building."



Name.....

Address.....

COUPON

COUPON

Which?-- The Answer

The desirability of wall board is beyond question. It fills a necessary and distinct function in both business and residential structures.

In the mind of the architect then, there can arise but one question—that is, which to specify.

And discrimination is important. But a knowledge of

Fiberlic for Walls and Ceilings

and its pronounced superiorities should settle the question for all time.

Fiberlic is made entirely of long, tough, imported root fibre. Therein lies its chief claim to your recognition. Its construction gives it great tensile strength, pronounced fire resisting qualities and astounding durability.

It comes in standard size sheets and is made in three weights. A fine cross-cut saw alone is needed to cut it to any desired size. Fiberlic is nailed directly onto the studding. There are special Fiberlic paints and stains in 24 different colors and shades which permit of a wide variety of color effects.

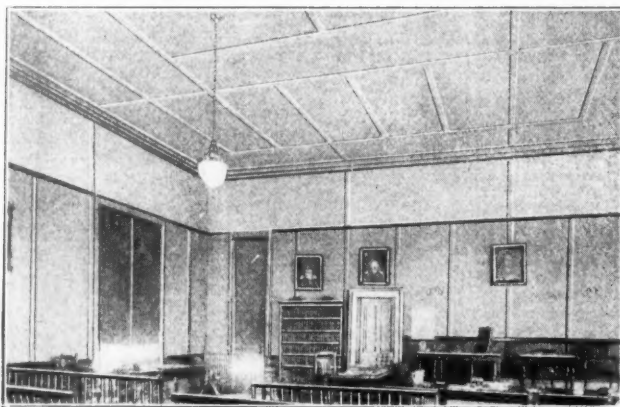
Sample of Fiberlic and explanatory literature on request.

The Fiberlic Company Camden, N. J.

New England Branch: 140 Washington Street, North, Boston, Mass.

New York Branch: Fuller Bros. Co., 139 Greenwich Street.

London (England) Branch: MacAndrews & Forbes, Ltd., Finsbury Court, E. C.



Court Room at Tawas City, Michigan, finished in Carey Ceil Board

THERE IS NO DULL SEASON

Profitable, easy work all year round, remodeling public buildings and private homes, making finished rooms in attics and cellars with

CAREY

Ceil-Board
SUPERSEDES PLASTER FOR WALLS AND CEILINGS

Natural wood grains or plain. Convenient sizes that cut to advantage. Warmer in winter, cooler in summer and dry at all seasons. We have more than fifty branches. One of them is near enough to your town to give you quick delivery at low freight rate.

Write today for prices and proposition to builders

THE PHILIP CAREY COMPANY

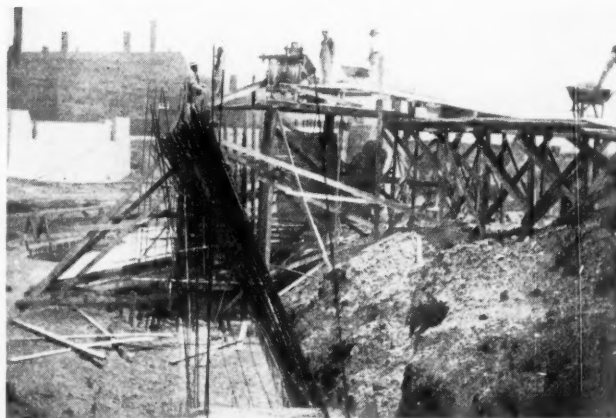
General Offices 1021 Wayne Ave., Lockland Cin., Ohio
OFFICES & WAREHOUSES IN PRINCIPAL CITIES



This Contractor Uses a Ford Automobile and an Archer Concrete Mixer. He's Making Money.

thus in yardage equaling the average work done by the large expensive road pavers and at a labor cost of about 8 cents per square yard. On straight run work where it is not necessary to move the machine frequently, many contractors claim to be able to mix from 75 to 100 yards per day using this mixer.

The mixer weighs 1,920 pounds and sells at a trifle under



An Archer Special Mixer up in the Air on Viaduct Work.

12 cents per pound. It is guaranteed for one year. For full particulars address the Archer Iron Works, 2600 W. Thirty-fourth Place, Chicago, Ill.



New Edition Hendricks Commercial Register

The annual edition of Hendricks' Commercial Register for Buyers and Sellers has recently come off the press. The new edition has been thoroly revised, name for name, from cover to cover. All the deadwood has been eliminated and much useful information has been added.

Complete lists of manufacturers and buyers in all branches of business are listed. All buyers and sellers should have a copy, as it will be mighty useful at all times. More than 350,000 names are listed under about 45,000 classifications with regard to the various types of business engaged in. Special attention is paid to the products used in contracting, electrical, hardware, iron, mechanical, mill, mining, quarrying, railroad and kindred trades.

The entire register has been reset in new type and the indexing is most complete, so that no difficulty is encountered in finding any classification desired. The lists furnished are even more reliable than formerly. The binding is of leather.

The S. E. Hendricks Company, Inc., are the sole proprietors of this register and are located at 2 West Thirteenth Street, New York City. They will be glad to furnish further details of the Buyers' and Sellers' Register to those who are interested. Purchasing agents and sales managers will find this invaluable.

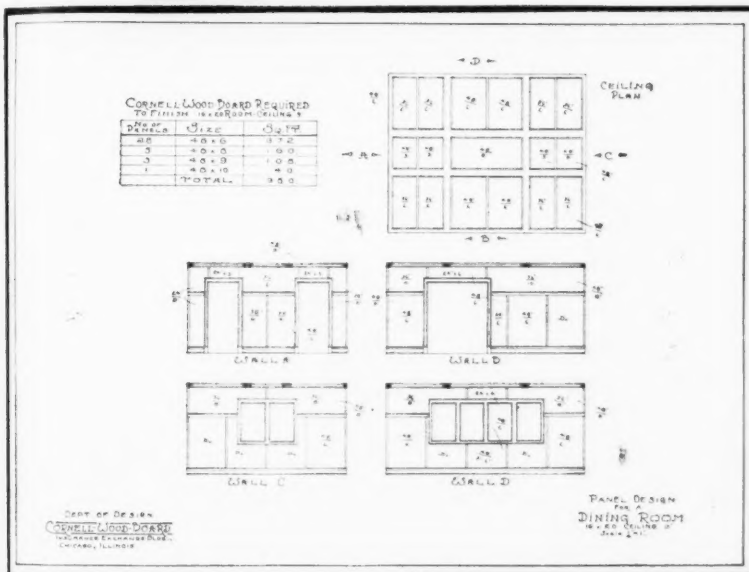
FREE**Plans & Specifications****Furnished**

Complete in every detail—drawn up by an architect who has made a specialty of creating beautiful interiors in paneling by using decorative Board instead of heavy, cracking, cold plaster.

Just Send Us Rough Dimension Sketches of the job you have up. We Will Furnish these complete Plans and Specifications, Bill of Wall and Ceiling Material, and Estimate of Material Cost—All ABSOLUTELY FREE.

NO CHARGE OR OBLIGATION WHATEVER

We want at the Very First Opportunity to show you exactly how you can obtain beautiful results with Cornell Wood Board—the light easy-to-apply wood board is rapidly superseding lath-and-plaster both on new work and remodeling.

**Cornell-Wood-Board****IS GUARANTEED NOT TO WARP, BUCKLE, CHIP, CRACK OR FALL****Some of the Many Advantages of this Material**

- Light—heat-insulating.
- Makes rooms **Warm** in winter and **Cool** in summer.
- Inexpensive**—lasts as long as the building.
- Takes **Paints or Kalsomine** Perfectly.
- Can be put up in **Any Weather**.
- Sized through and through.
- Atmospheric changes don't effect it.
- Made in the largest wall-board plant in the world—insuring uniform high quality.

Use the Handy Coupon

Send us blue prints or sketches of your next job, and let us send you complete plans and specifications showing **exactly** what you can do and how to do it. Let us tell you how inexpensive Cornell Wood Board is.

Cornell Wood Products Co.

107 Insurance Exchange Building - Chicago, U. S. A.

MAIL This Coupon

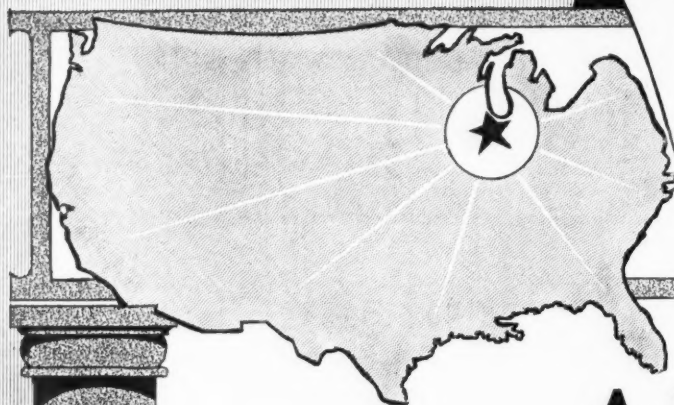
Cornell Wood Products Company
107 Insurance Exchange Building
Chicago, U. S. A.

Gentlemen:—As per your offer, please send **Complete Plans and Specifications, Bill of Material, and Estimated Cost of Job**—using the enclosed blue prints or sketches as a basis. Also send free sample of Cornell Wood Board.

We understand that this **Service is Absolutely FREE** to us—No Charge or Obligation Whatever.

Name

Address



Look Before You Build

Here, under one roof, is the World's Greatest Building Shopping Center. Here the prospective home builder can see for himself just what his needs require. Here the contractor can get in direct touch with the people from whom he buys, and knowing them personally can better serve his clients and himself. Here the architect can become better acquainted with materials that he is asked to specify. Here can be bought practically everything that enters into the construction of a building, whether it be a skyscraper or a Bungalow.

A Permanent Exposition

AIR CONDITIONING APPARATUS.
Warren Webster & Co.

ANDIRONS AND SCREENS.
Colonial Fireplace Co.
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ARCHITECT'S MAILING SYSTEM.
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COAL CHUTES.
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DIES.
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DISH-WASHING MACHINES.
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DOORS (METAL).
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DOORS (WOOD).
Conway Veneered Door & Mantel Co.
Morgan Sash & Door Co.

DOORS (SIDEWALK).
American 3-Way Prism Co.

DUMB WAITERS.
Kaestner & Hecht Co.

ELECTRICAL APPLIANCES.
Commonwealth Edison Co.

ELECTRIC STOVES.
Standard Electric Stove Co.

ELEVATORS.
Kaestner & Hecht Co.

ELEVATOR DOOR-CLOSING DEVICES.
Kaestner & Hecht Co.

ELEVATOR ENCLOSURES.
Winslow Bros. Co.

FENCING POSTS.
Max G. J. Hoffmann Co.

FIRE AND PAVING BRICK.
Thomas Moulding Brick Co.

FIRE HOSE EQUIPMENT.
W. H. Salisbury & Co.

FIREPLACES.
Colonial Fireplace Co.
Thomas Moulding Brick Co.

FLAG POLES AND SUPPORTS.
W. O. Willison.

FIREPROOFING TILE.
National Fireproofing Co.
U. S. Gypsum Co.

FLOORS (CERAMIC).
Art Marble Co.
Alpha Mosaic Co.
Venetian Mosaic & Tile Co.
I. S. Spiro Co.
Grueby Faience & Tile Co.
F. O. Neubacher.

GAS STOVES.
Fy-er-less Co.

FLOORING (COMPOSITION).
Thomas Moulding Brick Co.

GARBAGE BOXES (CEMENT).
Max G. J. Hoffmann.

GARBAGE BURNERS.
Kerner Incinerator Co.

GARBAGE CANS.
Angert Wire Iron Wks.
Donley Bros. Equipment Co.

GAS LOGS.
Colonial Fireplace Co.
F. O. Neubacher.
I. S. Spiro Co.

GLASS TABLE TOPS.
Marletta Glass Mfg. Co.
Plate Glass Window Mfg. Co.

GRANITE (MONUMENTS).
J. H. Anderson Granite Co.
W. O. Willison.

GRANITE.
J. H. Anderson Granite Co.
Maine & New Hamp. Granite Co.
Pike River Granite Co.
Stone Mountain Granite Co.
Woodbury Granite Co.

HARDWOOD FLOORING.
Kansas City Hardwood Flooring Co.

HOLLOW TILE.
National Fireproofing Co.

HYDRO STONE.
Barron & Harridge.

INCINERATORS.
Kerner Incinerator Co.

INTERIOR TRIM.
Alfred Struck Co.
Conway Veneered Door & Mantel Co.
Lindner Interior Mfg. Co.

JANITOR SUPPLIES.
Finola Mfg. Co.

KITCHEN CABINETS (STEEL AND WOOD).
Faultless Iron Works.
F. O. Neubacher.

KITCHEN DOOR RECEIVING BOXES.
Birch Mfg. Co.
Gordon Valentine.
Kennedy Wall Cabinet Co.

LATH (METAL).
Northwestern Expanded Metal Co.
U. S. Gypsum Co.
Thomas Moulding Brick Co.

LIGHTING FIXTURES.
Shapiro & Aronson.

LIGHTING SYSTEMS.
Leader Iron Works.

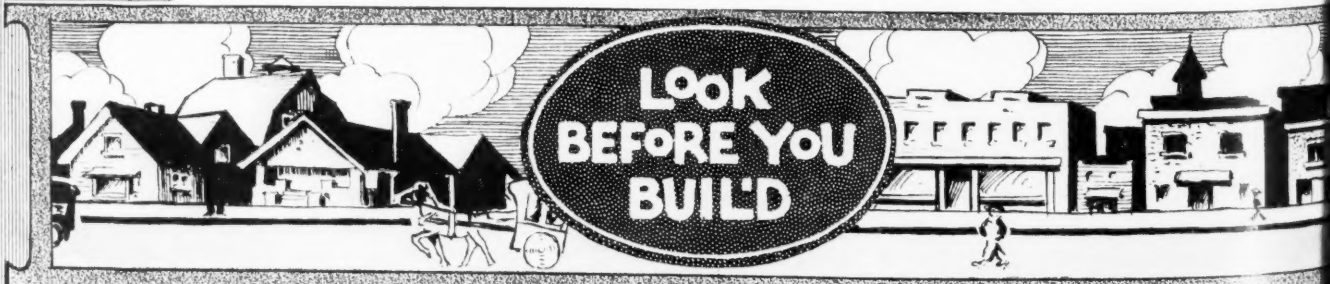
LIME.
Garden City Sand Co.
Thomas Moulding Brick Co.

MAIL CHUTES.
American Mailing Device Corp.

When writing or visiting any of the above firms, please mention the American Carpenter and Builder.

BUILDING MATERIAL EXHIBIT,

Entire Second Floor, Insurance Exchange Building, CHICAGO, ILL.



Look Before You Build

On these two pages are the names of the most responsible and progressive Manufacturers in Building Materials. Use these pages—they will appear every month—as your Buyers' Guide. When in Chicago make this Exhibit your headquarters. A few hours on this one floor will save you days of time. Our location is central—Jackson Boulevard and Fifth Avenue and is right in the heart of things in Chicago. We are in business to save you time and money. Remember, "It's Free to See" and you will be cordially welcomed.



For Better Building

MARBLE (FOREIGN & DOMESTIC)

Alabama Marble Co.
Colorado Yule Marble Co.
C. D. Jackson Co.
Vermont Marble Co.
Pisani Bros.
Tompkins-Kiel Marble Co.
The Vitrolite Co.

MAHOGANY LUMBER AND VENEER.

Bergdahl Walnut Forest Co.
C. C. Mengel & Bro. Co.

METAL MOULDING.

Brass & Copper Products Co.

METAL TRIM.

Art Metal Fireproof D. & T. Co.

ORNAMENTAL IRON.

Winslow Bros. Co.
Richey-Browne-Donald Co.

PAINTS AND VARNISHES.

Ayers, W. F.
Bridgeport Wood Finishing Co.
Detroit Graphite Co.
Frost Paint & Oil Co.
Nubian Paint & Varnish Co.
Pyrolin Products Sales Co.
Jas. B. Sipe & Co.
Trus-Con Laboratories.
Toch Bros.
U. S. Gutta Percha Co.

PLASTER AND PLASTER BOARD.

U. S. Gypsum Co.

PLASTERING CONTRACTORS.

McNulty Bros.

PLUMBING BRASS GOODS.

Glauber Brass Mfg. Co.
Harry Verbeek.

PLUMBING FIXTURES.

The Eljer Company.
Harry Verbeek Co.
N. Rosenzweig.

POWER PLANT SPECIALTIES.

C. A. Dunham Co.
Warren Webster & Co.

PRISMATIC LIGHTS.

American 3-Way Prism Co.

PUBLICATIONS.

American Architect.
American Carpenter and Builder.
Building Management.
Cement World.
Concrete-Cement Age.
Industrial Record.
Pacific Coast Architect.
Pacific Engineer and Builder.

PYROBAR.

U. S. Gypsum Co.

RADIATORS.

American Radiator Co.
Pressed Metal Radiator Co.

REFRIGERATING MACHINERY.

McClellan Refrigerating Machine Co.

REFRIGERATORS.

Sanitary Refrig. & Table Top Co.

ROLLING STEEL SHUTTERS.

Kinnear Mfg. Co.

ROOFING (PREPARED).

Heppes Co.
International Roofing Co.
Patent Vulcanite Roofing Co.

RUBBER TILE AND MATTING.

W. H. Salisbury & Co.

SACKETT PLASTER BOARD.

U. S. Gypsum Co.

SAND AND GRAVEL.

Garden City Sand Co.

SASH AND MILLWORK.

Barrows & Donellan.
Conway Veneer & Mantel Co.
Morgan Sash & Door Co.
Alfred Struck Co.

SCAGLIOLA.

McNulty Bros.
Michael Nocenti Co.

SCRUBBING MACHINES.

Finola Mfg. Co.

SEWAGE EJECTORS.

Shone Company.
Yeomans Bros.

SIDEWALK LIGHTS.

American 3-Way Prism Co.

SIGNS.

Marx Sign Co.

SHINGLES (ASPHALT).

Heppes Co.
International Roofing Co.
Patent Vulcanite Roofing Co.

SKYLIGHTS.

American 3-Way Prism Co.
Kniskely Bros.

SLATE (ROOFING).

Maine State Co. of Monson.

STEAM SPECIALTIES.

American Radiator Co.
C. A. Dunham & Co.
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Warren Webster & Co.

STEEL BEAMS AND ANGLES.

Angert Wire & Iron Wks.

STONE KOTE.

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STORE FRONTS.

Brass & Copper Products Co.

STREET LIGHTING POSTS.

Union Metal Mfg. Co.

SMOKESTACK LINING.

Central Asbestos & Magnesia Co.

TERRA COTTA (ARCHITECTURAL AND FAIENCE).

Northwestern Terra Cotta Co.

TILE ARCHES.

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VACUUM CLEANERS.

American Radiator Co.
Atwood Vacuum Cleaner Co.
Commonwealth Edison Co.
Excello Mfg. Co.
Frantz Premier Distributing Co.
Quam Pneumatic Cleaner Co.

VALVES.

Harry Verbeek.
The Hoffman Specialty Co.

VITROLITE TILE.

The Vitrolite Co.

WALL BOARD.

Cornell Wood Products Co.
Heppes Company.
U. S. Gypsum Co.

WASHING MACHINES.

Commonwealth Edison Co.
Eden Washing Machine Co.
Frantz Premier Dist. Co.
Wash-Easy Company.

WATER FILTERS.

Electric Water Sterilizer Co.

WATER HEATERS.

American Radiator Co.
Safety Water Heater Co.

WATERPROOFING.

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Toch Bros.

WATER SUPPLY SYSTEMS.

Leader Iron Works.

WEATHERSTRIPS.

Chicago Metal Weatherstrip Co.
Higgin Mfg. Co.

WINDOWS (METAL & PATENT).

Gifford-Pierce Co.
Winslow Bros. Co.
Richey-Browne-Donald Co.
Sitta Hygienic Window Co.

WINDOW VENTILATORS.

Ideal Ventilator Co.
Plate Glass Window Ventilator Co.

WIRE AND IRON.

Angert Wire & Iron Works.

WIRE GLASS.

Mississippi Wire Glass Co.

When writing or visiting any of the above firms, please mention the American Carpenter and Builder.

BUILDING MATERIAL EXHIBIT,

Entire Second Floor, Insurance Exchange
CHICAGO, ILL.

**LOOK
BEFORE YOU
BUILD**



A Nova Scotian residence of Herringbone. Home of Frank A. Gillis, Halifax, Architect, H.E. Gates, Halifax.

How to Figure Close on a Contract

If it's a Herringbone job, you can use 25% less studding, for the spacing can be 16 inches.

You can figure on saving a goodly per cent on your scratch coat, for Herringbone spreads rather than cuts the plaster. You can count on rapid plaster work over

Herringbone Rigid Metal Lath

for it does not give under the trowel. Herringbone goes up fast. No wiring between studs. Has interlocking selvage edges. Always comes painted—protected from the weather if left exposed. Other cut-cost features are given in

Our Herringbone Book Free

Send for your copy today. Tomorrow you may want to know all about working with Herringbone. Take this opportunity and learn now.

The General Fireproofing Co.

6120 Logan Ave., Youngstown, Ohio

Makers also of Self-Sentering—the concrete reinforcing that eliminates the need of forms

Herringbone Rigid Metal Lath was used in the Hotel Plaza, New York. H. G. Hardenbergh Architect.



Trade Mark
Reg. U. S. Pat. Off.

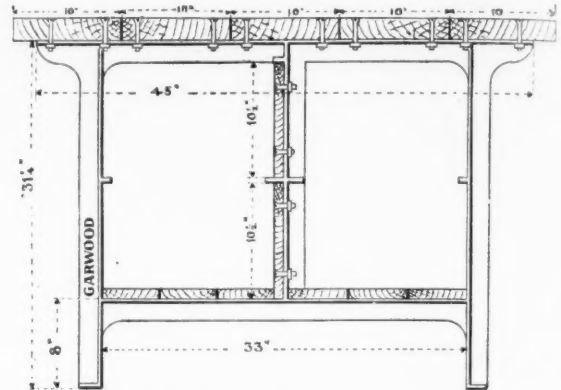


HOTEL PLAZA
NEW YORK CITY

The Legs Make the Bench

The Garwood Bronze & Iron Works, Garwood, N. J., is offering a new cast iron bench leg, which should be of interest to every carpenter and builder. With these legs, the lightest, most rigid, and most inexpensive bench can be easily erected. It is not necessary to fit the lumber for the bench, used with these legs. The lumber needs only to be squared at the end and put on, one board after another. All boards run continuous full lengths, without cutting into short lengths and fitting into place.

The use of the Garwood legs insures an absolutely rigid bench. There is no end sway, and the bench can be placed



Double Bench Equipped with Garwood Cast Iron Legs.

in the center of the room and still be perfectly rigid. For small woodworking shops, this bench is of great value, as hangers for shafting can be carried underneath the bench; it is not necessary to carry them from the ceiling. Garwood bench legs are made in all sizes, and standard sizes are kept in stock, so quick shipment is assured.

The company is also looking for carpenters and builders to act as agents to install these benches in garages, small work shops, homes, etc. A special proposition is offered and further particulars can be obtained by writing the Garwood Bronze & Iron Works, Garwood, N. J.



House Moving Trucks for Building Contractors

Very often the building contractor is called upon to move buildings from one location to another. To do this work economically he must have the proper tools.

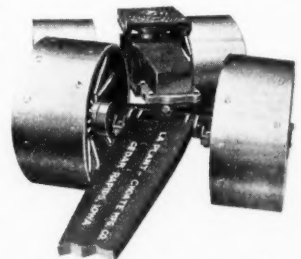
The LaPlant-Choate Manufacturing Company, of Cedar Rapids, Iowa, have designed house moving trucks for this work. Their latest model is the all-steel "Giant" truck shown in the illustration. The entire truck is made of Bessemer steel—not wood, which rots and weakens. It will stand abuse and hard work.

The new ball and socket header allows good oscillation in passing over uneven roads. The new, narrow bolster permits shorter turns.

Three of these will carry a 12-room house.

The simplicity of these steel "Giant" trucks allows its use by anyone and it is plain that a set of these trucks will save a carpenter and builder enough time and labor on three or four jobs to pay for these tools easily.

Circulars fully describing and illustrating the full line of house moving equipment manufactured by the LaPlant-Choate Manufacturing Company, 621 Eastlack Court, Cedar Rapids, Iowa, will be mailed on request.



"Giant" All-Steel Moving Truck.



Panoramic view of storage shed showing stock terra cotta for immediate delivery.

STOCK TERRA COTTA

—costs no more than ordinary terra cotta, besides effecting a saving of two to four weeks' time in delivery.

—Manufactured in white enamel only.

—Base-courses and water-tables in either white enamel or mottled gray.

MIDLAND
TERRA COTTA
COMPANY

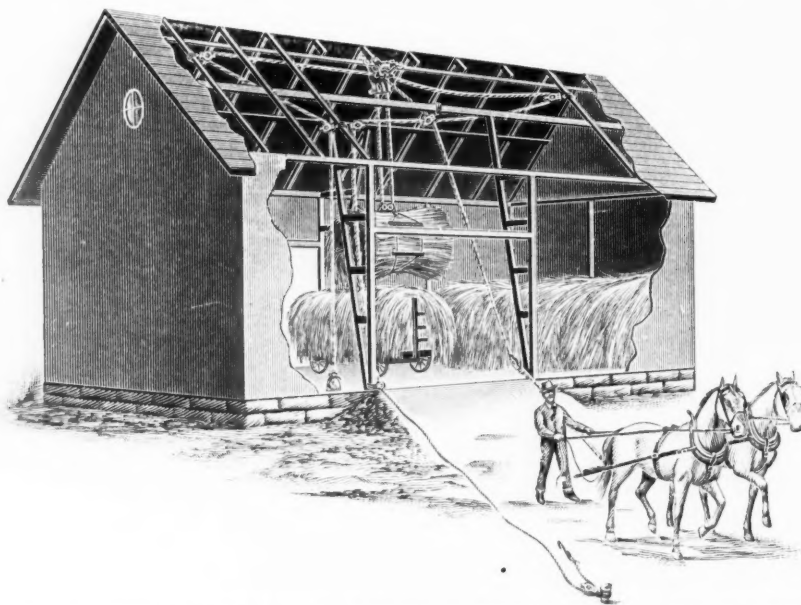


1515 LUMBER EXCHANGE, CHICAGO

WHEN WRITING ADVERTISERS' PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

The Cross Draft Carrier

In handling hay in a barn it is necessary first to raise the hay and then shift it to the end of the barn. For the hay rig to be at all efficient in this work there should be as little lost motion as possible.



This illustrates Ney's No. 130 Cross Draft Carrier in Operation, the First Sling-full Being Elevated. Also Showing Method of Roping the Carrier.

In Ney's cross draft carrier this operation is made extremely simple, as shown in the illustration. The operation is as follows: The load of hay, supported in a sling, is lifted to the required height by means of the draft rope. An auto-

matic lock holds the load at this height while the horses are turned around. The shift rope is then attached to the team and the load carried to the end of the barn. After the load is released the carrier is returned to its central position by the weight shown at the side of the door. The lock on the carrier is then released by a slight jerk on the draft rope. In case the hay is to be placed in the other end of the barn, the shift rope which is equipped with the weight is run out to the stake in the ground and the other has the weight fastened on it.

In this carrier it is not necessary to lift the load any more than is necessary to clear the wagon or other obstructions. It locks in any position. The elimination of many pulleys makes the draft lighter so that smaller rope can be used. This reduces cost and causes less strain on the horses. No extra trip rope is needed as the unlocking is accomplished by a slight jerk on the draft rope.

The Ney Manufacturing Company, the makers of this carrier, are located at Canton, Ohio, Council Bluffs, Iowa, and Minneapolis, Minn. They suggest that our readers send in a description of the types of barn used in their localities. The company will then send

them hay carrier information as applied to these types. The application of labor-saving devices of all kinds is as important on the farm as anywhere else. Builders can add to their business materially by handling them.

\$25⁰⁰ Paid for One Day's Work NEW MIGHTY MONEY MAKER!



Price
\$1.00
That's All!

Over
One Million
in Use
Millions
To Be Sold

THE MILLION DOLLAR HIT!

New, wonderful home invention, just introduced, yet million sales already recorded. Tremendous, rapid sale staggers country. Agents happy—banking enormous profits daily. Mighty opportunity for you to get the mighty dollar. Failure impossible. Experience unnecessary. Money rolls in first hour—\$10.00 to \$30.00 daily. Amazing cash records made. Walters made \$25.00 first day; never sold goods before. Arnold, N. Dak., Carpenter, orders one, then 2 gross; sold 160 in 2 days.

Cleared \$80.00 in Two Days

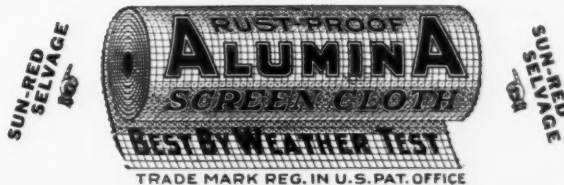
Hagen, Texas, sold 100 in two days. Webb, Pennsylvania, Contractor, averaged 10 sales per hour. O'Connell, Montana, 25 first day. Mike Bock, Minn., writes: "They are fine sellers; worked one day and sold 30 (profit \$15.00)." Harry Gassmann, Illinois: "Can sell scrapers as fast as I can get them. Overwhelmed with orders. Everybody wants scrapers; 100 already sold." Roy Burningham, Mass.: "Send 10 dozen. One week's work." Hundreds like these. You, too, can have money in abundance.

GRAB'S SCIENTIFIC SHOE CLEANER

Sells itself—you take orders—that's all. Every family wants one on their doorstep. Replaces unsightly, unsanitary, crude door mat. Automatically removes mud, dirt, snow from shoe in one operation. Cleans sole, sides, heel. Works like magic—sells like "sixty." Saves drudgery, time, money, shoes—saves carpets, floors. Mechanical wonder. Has 7 new patented features not found in any other scraper—10 steel blades—10 dirt outlets—twin adjustable and removable brushes—compound springs. Rotates for sweeping. Can't clog—practically self-cleaning. Handsomely enameled. Nothing else like it. Nothing so popular—so easy to sell. Selling price only \$1.00. You make half—100%. Satisfaction guaranteed. Write quick for free catalog—exclusive agency. Better still, send order, naming territory. Investigate anyhow.

SECURITY MANUFACTURING CO. DEPT. 208 TOLEDO, - - OHIO

ALUMINA— Best By Weather Test



Good Windows and Doors— Why Not Good Screens?

Good windows and good doors—good paint and good roofing—they are all necessary for the proper finish of a good house. *Of course!* Then don't spoil the owner's enjoyment by giving him screens that will "leak" insects the first season. Good screens will make you more money—and a better reputation. There's just one answer to the "better screen" question—that's

Reynolds Rust-Proof Alumina

Alumina costs little more than the cheapest cloth you could specify—it positively outlasts any other steel wire cloth of equal weight and mesh.

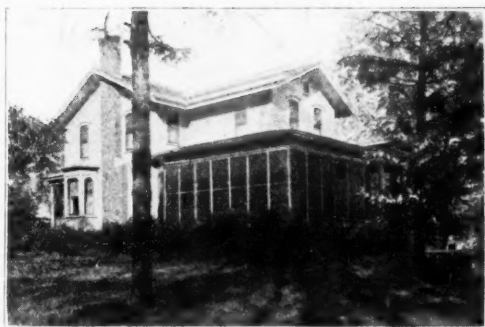
Alumina is electro-plated *after weaving*—not hot galvanized *before* weaving. There's a big difference. It means that for the same cost you can furnish screens guaranteed to look well and last long enough to satisfy anybody.

You don't paint the lumber before you build a house—you'd knock off too much paint. We don't electro-plate **Alumina** until it is woven and inspected once—after all the bending and scraping of the wire in the looms is done.

We put on ten elastic coats of chemically pure zinc. They stay on to protect the wire. Only one stiff coat can be applied by hot dipping. When it cracks, the wire rusts through in a hurry.

A distinctive trade mark strand woven into the selvage is positive proof of galvanizing before weaving, and of scraping during the weaving process. Be safe—use **Alumina**—the cloth with the Sun-Red Selvage.

Dixon Black now carries the Sun-Red Selvage trade-mark—emblem of quality—and the strongest possible guarantee.



This house is screened with **Alumina**. The annual cost of screens is less than for the average laborer's cottage. Long life and freedom from labor for repairs prove **Alumina Best by Weather Test**.

Carpenters Read This!

Put in your time this winter making screens and fitting screen porches. But don't waste high-priced labor on short-lived cloth. Write for samples and a copy of our guarantee on **Alumina**—it protects you with your customer.

REYNOLDS WIRE CO.

Quality Cloth Since 1893

101 River Street - Dixon, Ill.



Look for the **SUN-RED SELVAGE**
on every foot of every roll

GUARANTEE



SECURITY and Boost Your Profits

This lock can be attached to a hinged or sliding door as quickly and easily as an ordinary lock and there is *more profit* in handling the



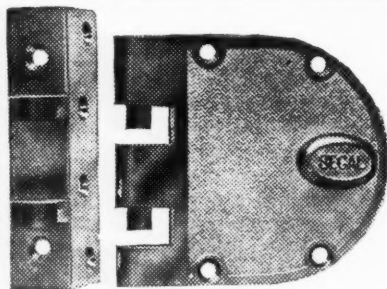
The finished job is more ornamental, attractive and satisfactory. Consequently you also secure *more for your work*.

Every Burglary in your locality offers you an opportunity to make money. Every merchant in your town is a prospect. Wherever security is required, the BURGLAR PROOF LOCK should be put on. Every big insurance company has endorsed it.

It is jimmy proof, strong, durable, simple, profitable

This lock is not made from an easily destroyed iron casting. It is solid bronze, highly ornamental, gives absolute security and as it can be installed easily and quickly, it's doubly profitable.

Investigate its merits. You are in business for profit—here's your opportunity.



Write today for complete details and descriptive matter on BURGLAR PROOF LOCKS.

Burglar Proof Lock & Hardware Corp.
13 Park Row, New York City

Burglar Proof Lock & Hardware Corp.,
13 Park Row, New York City.

Please send me prices and complete information on the Burglar Proof Lock.

Name

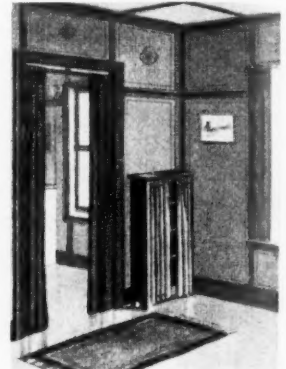
Address State

"Rock-Board" from Rock-Ford

There is being offered our readers in this issue for the first time a new material, named so that you can't forget it—"Rock-Board from Rock-Ford." "Rock-Board" is made from selected material reduced to fibrous form and pressed into sheets of various sizes with a uniform thickness of a fraction less than $\frac{1}{4}$ inch. It is finished in various ways. A grained surface can be put on or the surface can be finished smoothly.



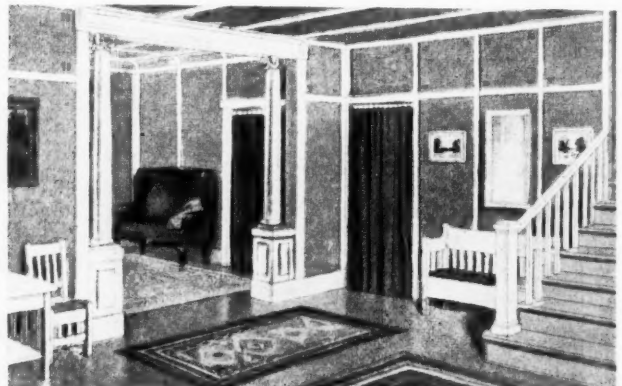
How "Rock-Board" is Nailed to the Studding. Only One Man is Necessary.



The Same Room Finished. Decorations Can be Applied as Soon as "Rock-Board" is Nailed to the Studding.

so that it is adapted to painting or tinting in any color scheme that may be chosen. The joints between the sheets may be also handled in several ways. They may be covered with wooden strips or a special filler may be used and a smooth wall made. This smooth wall may be finished with an artistic stencil which will give a pleasant appearance.

"Rock-Board" is made in two widths: either 32 or 48 inches. The length is made to suit each individual case. One length can be ordered for the ceiling. These sheets should



A Pleasing Reception Hall. There are No Limits to the Decorative Schemes Possible with "Rock-Board."

be long enough to reach across the room the way the joints run and, as they are put on first, they should reach to the wall studding on each side. The side wall boards can then be ordered of a size to fit snugly against the ceiling boards and reach to the baseboard.

The Rockford Paper Box Board Company, the makers of "Rock-Board," will be glad to furnish particulars to our readers, showing how this material can be utilized for getting winter business. Their address is Rockford, Ill. They are prepared to send, on request, samples showing the construction and finish that is used on their product. The accompanying illustrations show two interiors finished in "Rock-Board" and also the method of applying the same to the walls.

We suggest that our readers write to them and get the samples of their material and descriptions of how it is used. Don't forget the name—"Rock-Board from Rock-Ford."

CHRISTMAS GIFTS

that Count for Something!

Not mere passing conveyers of sentiment, to grow shabby or forgotten in a week, but a **quality** hammer or hatchet with real practical day-in-and-day-out value—that's what the man who does things will appreciate. He knows good tools, too, knows the niceties of balance and design, quality of material and workmanship—that's the reason you'll please him best with

GERMANTOWN MASTER BUILDER TOOLS



OUR NEW SINGLE BEVEL HALF HATCHETS are in every detail the finest tools of their kind that can be made. Thin bit, splendid balance, perfect cutting edge of single bevel hewing a straight line. Handle of second growth hickory, octagon shaped and swell ended. Individually tempered and tested. Drives nails like a hammer. Two sizes:—\$1.50 each.

MASTER BUILDER BROAD HATCHETS are absolutely dependable in every respect. Perfect in design and balance; thin, remarkably hard bit with swell bevel that throws chips and prevents wedging. Second growth hickory handle that cannot break or come loose. Subjected before leaving our factory to the most severe tests. Two styles:—\$1.25 and \$1.50.

MASTER SHINGLERS HATCHETS are of a pattern that will instantly appeal to the experienced workman. The scoring is double forged by our own special process and is guaranteed twice as durable as the scoring of the ordinary lath hatchet. Gauge attached to bit. The edge of the **Master** is the

most remarkable for toughness and hardness ever produced. Price, \$1.25.

MASTER BUILDER HAMMERS are made in every style for every purpose. The Adze Eye Nail illustrated here is a general utility hammer that cannot be beaten. Hammer-forged from the finest steel for the purpose obtainable, individually tempered and subjected to the most severe tests. Nail holding attachment in claw for overhead work. Three styles—11 oz., 16 oz., 20 oz., Each, \$1.00.

See these tools at your dealers. Examine them carefully and you will readily see why they have been the choice of master builders all over the country for a half century.

Germantown Tool Works

Philadelphia, Pa.

Branch: 62 East Lake St., Chicago

Fiberlic "White House" Exhibits

Atlantic Highlands, New Jersey, boasts of one of the finest and most modernly constructed bungalows along the Atlantic Coast. It faces a boulevard that connects two important seaside resorts and commands the attention and favorable comment of passers-by.

As you pass into the entrance of this bungalow thru the craftsman front door, you are immediately impressed with



Artistic Bungalow at Atlantic Highlands, N. J., with Interior Decoration of "Fiberlic."

the attractive and aristocratic appearance of the walls and ceilings. In fact, every room in the bungalow gives one the same impression.

The designer and builder of the "White House" have taken into consideration every detail that would make for attractiveness, convenience and safety, both as to exterior and interior.

The big interior problem in constructing this bungalow was the selection of an indestructible, fire-resisting surfacing. After a thoro investigation, "Fiberlic" was selected. This is

one of the latest development in wall board and is manufactured by The Fiberlic Co., Camden, N. J.

This Company claims many superior features for "Fiberlic." In its manufacture the Fiberlic Company uses a chemical treatment and not a mechanical treatment. This chemical treatment preserves the fibre lengths of the raw material, and makes for strength and durability in the finished product. This process also makes the board absolutely odorless and sanitary.

The Fiberlic Company endeavors to co-operate with builders and contractors and for this purpose maintains an Architectural Department, which is always at their disposal in the matter of furnishing specifications and designs for wall board construction.



A New Power Tamp

Among the new machines that are to be displayed at the coming Chicago Cement Show is a power tamp made by the Miles Manufacturing Company, 309 Franklin Street, Jackson, Mich. This tamp mechanism is to be operated on the chain lift principle. It is designed so that a block machine can be mounted inside it. Various types of block machines can be used in connection with it.

This company is also making a line of automobile trailers that assist in making an automobile or truck pay on construction work.

Further details can be secured from this company at the above-mentioned address.

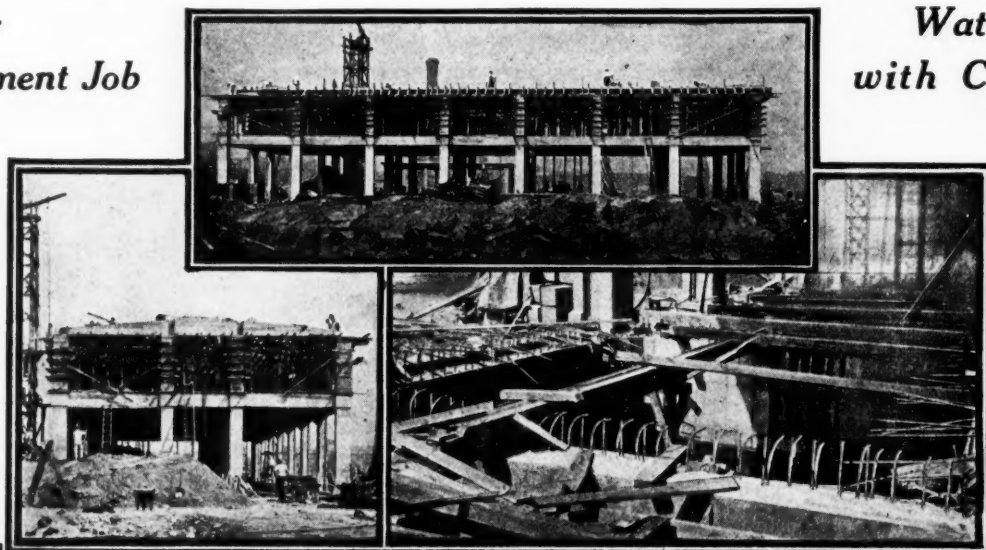


Garage Door Equipments

The accompanying illustrations show the inside and the outside of a garage door that is equipped with Stanley's wrought steel garage door hardware.

Another Government Job

Mill Rock Storage Warehouse, East River, New York.



Waterproofed with CERESIT

Once again Uncle Sam has set the seal of Government approval on CERESIT as a dependable waterproofing. Each time it has been chosen for a difficult proposition—down on the Panama Canal, out in Long Island Sound for a lighthouse, and now for the Storage Warehouse shown above for waterproofing the cistern and boiler room against a seven-foot head of tidewater.



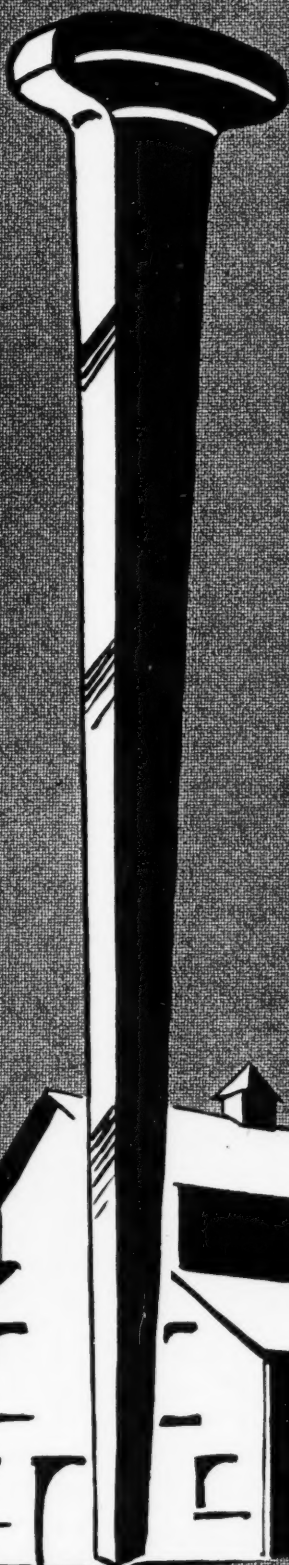
The contractor is at present using the boiler room and the cistern as storage reservoirs for his fresh water supply used in tempering the concrete for the superstructure, so that CERESIT is serving the double purpose of keeping the tidewater out and keeping the fresh water in.

Ceresit Waterproofing Compound is just as successful on the small jobs—for waterproofing basements, silos, cisterns, stucco walls, or anything in concrete and cement. Our engineers offer their services to you free of charge; they will gladly answer any question you ask them. Write for interesting information.

Ceresit Waterproofing Co.,

910 Westminister Bldg., Chicago

The Backbone of a Building —



is made up of nails

If they are:

Weak nails, they will soon rust, and give way, causing either a dilapidated appearance, or a heavy expense for repairing.

If they are Iron or steel

Cut Nails

They will not only lengthen the life of a building, but will save the cost of upkeep.

They cost less and are more efficient than other nails.

We have examples of Cut Nails that have been in service over 200 years.

As long as you have to buy and use nails, why not buy and use the best — Cut Nails. They will cost you less, both now and in the future.

Your common sense demands that you give them at least a trial before you decide.

Write to nearest manufacturer listed below for free Samples and name of nearest local dealer.

Cut Nail Manufacturers'

E. & G. Brooke Iron Co.	-	-	-	Birdsboro, Penna.
Van Alen & Co., E. G. Van Alen	-	-	-	Northumberland, Penna.
Tremont Nail Company	-	-	-	West Wareham, Mass.
Geo. B. Lessig Co.	-	-	-	Pottstown, Penna.
Williamsport Iron & Nail Co.	-	-	-	Williamsport, Penna.
La Belle Iron Works	-	-	-	Steubenville, Ohio

Don't Let Jack Frost Drive You From The Job



Don't discontinue your building operations when winter weather sets in. Turn that period of idleness into one of profit. Keep your skilled help by keeping them busy. You can do it on **Kellastone** stuccoed buildings and you take positively no chances of loss due to freezing weather for

You Can Apply
KELLASTONE
IMPERISHABLE STUCCO
In Zero Weather

with the same degree of success as on an ideal summer day. Unlike other stuccos, **Kellastone** is not mixed with water. Instead a non-freezing mixing compound is used. Temperature conditions will not cause it to expand or contract. This is just as true when it is in the mixing box or when being applied, as it is years later when that beautiful **Kellastone** exterior has withstood many severe winters. It is a non-conductor of heat, cold or dampness and consequently affords valuable protection to interior walls plastered in cold weather.

Get the Details

Send for our free literature. Know the facts. State if also interested in **Kellastone** Composition Flooring and **Kellastone** Interior Plaster. Write now.

The National Kellastone Company

504 Association Bldg.

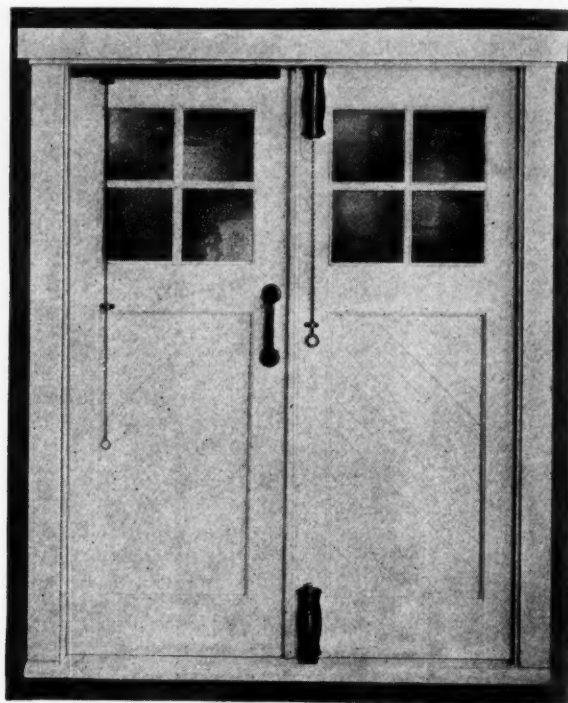
Chicago, Ill.

Here's
Proof



Mr. T. P. Burnett, Archt.,
Central National Bank Bldg.,
St. Louis, Mo.
Dear Sir: Mr. W. Bovey called on
me today and requested me to write
you what I know of Kellastone.
I have used a great deal of this
material and can recommend it very
highly. I have used it on the Drexel
Cafe here in Chicago, on the Black-
stone Cafe in Chicago, on the Black-
stone Cafe in Chicago, and on the
First National Bank of Chicago, Ill.
At both the Drexel Cafe and the
Blackstone Cafe it was put on in
freezing weather and the jobs speak
for themselves. There is not a crack
in the buildings nor any loose Kella-
stone on same.
You may use Kellastone with all the
assurance in the world that you will
not be disappointed in this material.
Yours respectfully,
F. J. Ohrenstein, Architect

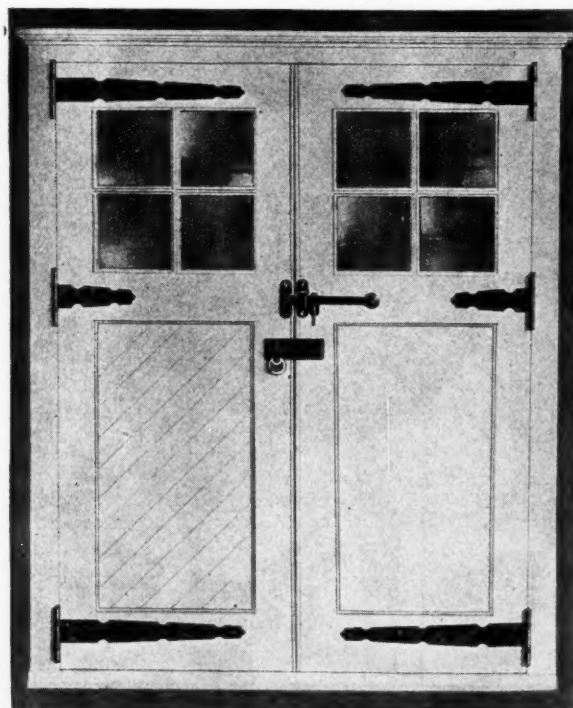
The inner view shows the foot bolt and the chain bolt at the bottom and top of the door. There is also another piece of apparatus that can be used to take the place of these two bolts. It is called the wrought steel heavy cremone bolt and



Inside of Garage Door Equipped with Stanley Garage Door Material.

reaches from the floor to the ceiling. The bolts at both the top and the bottom of the door in this arrangement are unfastened by turning a lever placed opposite the handle in the other door.

All the hinges are ball bearing, so that the door will not



Exterior of Same Door, Showing Hinges and Lock.

stick at any time. The inner view also shows the special stay that prevents the door from closing in the wind.

All this equipment is described in a small folder that can be secured from the Stanley Works, New Britain, Conn. Ask for Circular "A."

Crown Your
Buildings with

VULCANITE

Ornamental
Roofing and
Shingles



A Most Pleasing
Variety of Effects Obtainable in Colors and Designs

SAFETY AND BEAUTY

Heretofore, safety has been secured by the wealthy by using slate and tile roofs. The man of moderate means had to take chances and has repeatedly seen all he possessed destroyed by a flying spark or a fire brand.

Temporary color effects have only been possible by the use of stains and paints, but these did not withstand sun and rain for any length of time.

It has remained for the Patent Vulcanite Roofing Co. to give the public a roofing material that perfectly combines the qualities of safety, comfort and beauty at so low an initial cost, that no one now needs to put over his home such a flimsy, highly combustible and temporary covering as a wood shingle roof.

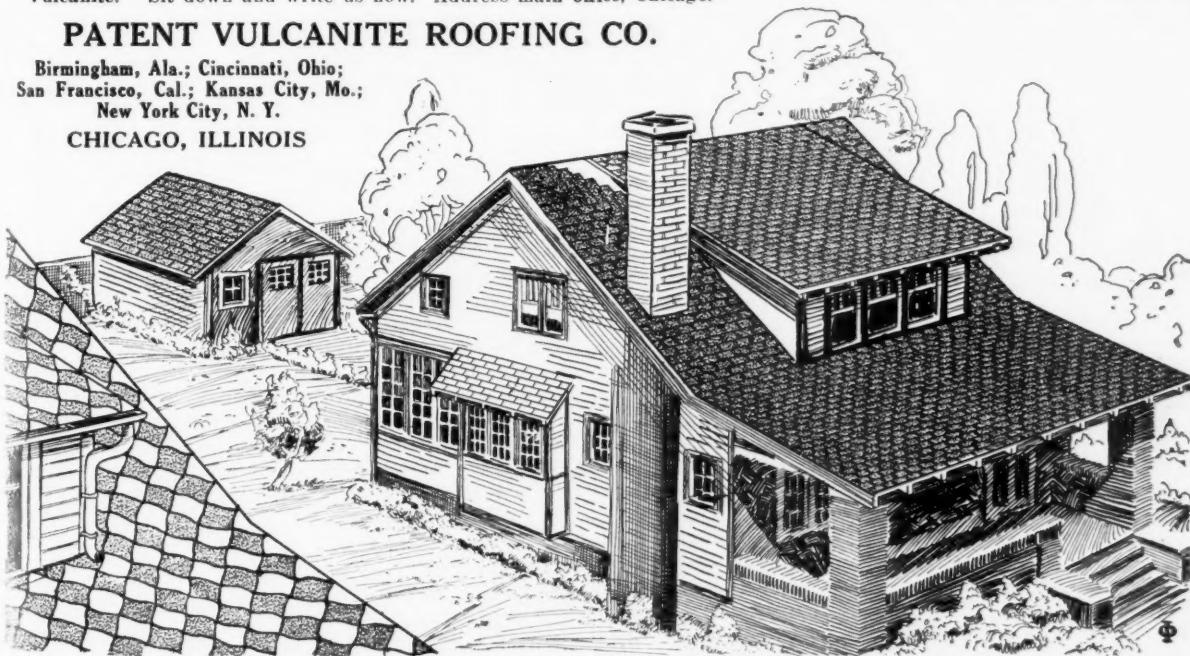
Vulcanite Roofings are an unfailing weather-proof and fire-resisting material. Twenty years' service is a reasonable expectancy. Vulcanite comes in rolls and shingles in several patterns that can be worked into a large variety of truly artistic effects.

We shall be very glad to send you our large illustrated catalogue which will show you some of our popular roofings and how they add to the appearance of a building. We'll also tell you just what we do for Builders to help them lay more "Vulcanite." Sit down and write us now. Address main office, Chicago.

PATENT VULCANITE ROOFING CO.

Birmingham, Ala.; Cincinnati, Ohio;
San Francisco, Cal.; Kansas City, Mo.;
New York City, N. Y.

CHICAGO, ILLINOIS



W. E. Dunn Manufacturing Co. Now Located in Holland, Michigan

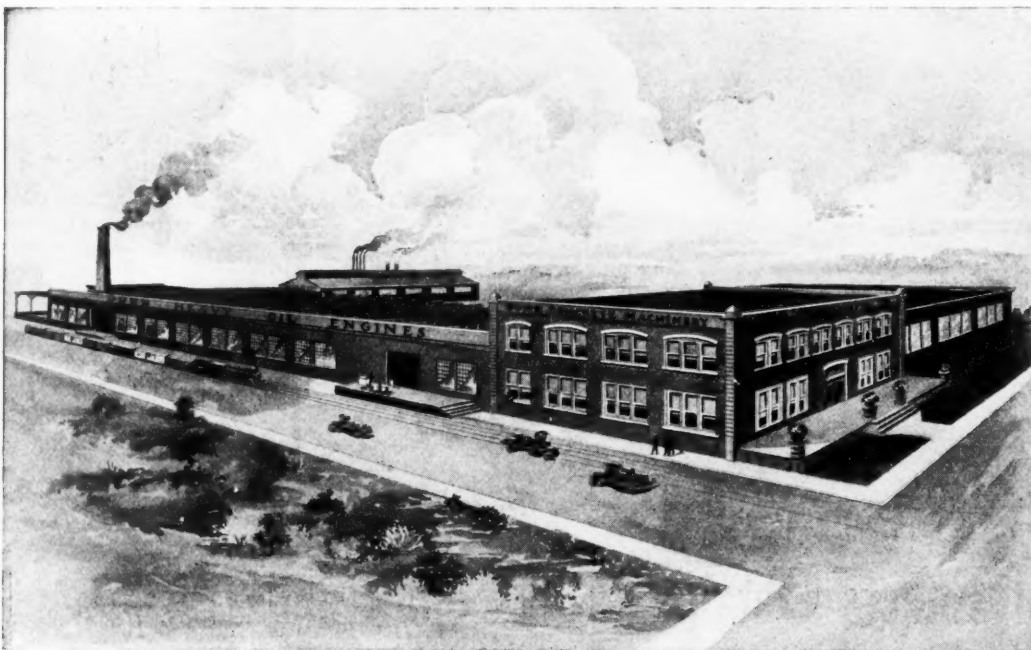
The W. E. Dunn Mfg. Co., builders of the Dunn line of Concrete Machinery and Dunn Heavy Oil Engines, have moved their entire plant and general offices from Chicago, Ill., to Holland, Michigan. For several years past this concern have felt the need of more factory space, and their removal will come as no surprise to those who have known

the difficulties under which the Dunn Company have been working.

It is interesting to note that in a comparatively short time the W. E. Dunn Mfg. Co. has risen from very modest beginnings to one of the largest manufacturers of concrete machinery in the world. The variety of their line has shown a corresponding increase.

The new Dunn factory is five times as large as the old plant, and is finely equipped to permit ideal manufacturing facilities. The building, which is of recent erection, is brick thruout, and an excellent example of modern factory construction. As a shipping point Holland is exceptionally favored, being in direct connection with all trunk railroads, and maintaining a daily freight and passenger boat service with Chicago. Shipments can be made from Holland to any point promptly and at low rates.

Catalogs on any Dunn machines or molds can be obtained



Bird's-eye View of New Dunn Manufacturing Company's Plant at Holland, Mich.

Rex-Strip Shingles

SLATE SURFACED



"Yes, I Use Them— and This Is Why!"

"Rex Strip Shingles wear longer, look better and are more practical than wood shingles."

"They combine the durability, attractiveness, weather-protecting and fire-resisting qualities of the modern asphalt shingle with a 50% saving in the laying cost."

"So, naturally I'm strong for them. Just think! I make a hit with the house-owner by giving him a better roofing. Further, I make a bigger profit through a big saving to me in labor costs."

Our friend, the Builder, is right. Rex Strip Shingles *do* look better and *are* better—because they're made that way.

And they *make* money and *save* money for close-figuring Carpenters and Builders—because the patented strip arrangement enables one man to lay the equivalent of five shingles in the time he ordinarily lays one. They save 40% in nails and the same in nailing time. No chalking—no spacing required. Obtainable in grayish green or dark red.

Drop us a line and we will explain further the economical efficiency of Rex Strip Shingles. Do so—TODAY.

FLINTKOTE MFG. CO., Inc.

BOSTON - - - - - 90 Pearl Street
NEW YORK - - - - - 67 Beaver Street
CHICAGO - - - - - 659 Peoples Gas Bld.

IMPORTANT:—Rex Strip Shingles are 40 inches long and 10 inches wide. The "slots" or "cut-outs" are ½ inch wide, and 4 inches deep. There are 5 shingles to a strip. The exposed portion of each shingle is 7-½ inches wide. Only 90 strips of 5 shingles each are required to cover 100 square feet of surface.



Bungalow of Chas. S. Bux, Harrisburg, Pa., roofing with Ambler Asbestos "Century" Shingles. Architect, H. F. Conover, Washington, D. C. Contractor, John Meyers, Harrisburg, Pa.

Ambler Asbestos "Century" Shingles

Competition Stimulates the Sales of this Artificial Roofing Slate

THE SUCCESS of Ambler Asbestos "Century" Shingles is a striking illustration of the truth that competition can never hamper a business that can deliver *values*.

Here is a roofing material that is right in line with the sound judgment of property owners—their ability to see the facts and their insistence on getting value for their roofing investment.

Today the roofing business has passed the stage where the property owner is willing to try anything once. He knows the facts about Ambler Asbestos "Century"

Shingles—their durability, permanence—freedom from painting and repairing—a roofing material to be depended upon.

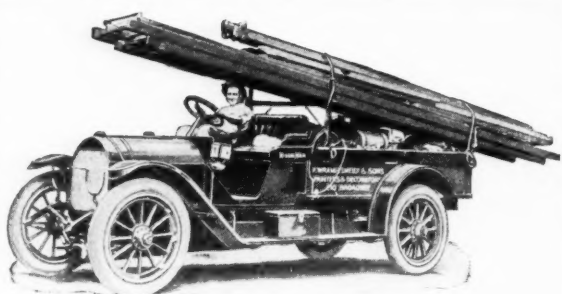
Ambler Asbestos "Century" Shingles enjoy a larger market than ever before, and one that is steadily increasing. Every day, contractors all over the country are taking up these Shingles and cashing in on their extensive popularity.

If you do not handle these Shingles, write us immediately for the facts. We will furnish you information about these Shingles—samples, terms and trade prices.

Keasbey & Mattison Company, Factors

Dept. B - Ambler, Pa.

BRANCH OFFICES IN PRINCIPAL CITIES OF THE UNITED STATES



Investigate and You'll Say *Kissel* Sure

IF you want to get your men "on the job" quickly, save the most time in running for tools and supplies—in short, make sixty minutes yield the fullest hour—you must use motor trucks.

Which truck? Many successful builders and contractors will say *Kissel* without a moment's hesitation.

May we give you *specific* information about the new 1000-pound delivery at \$950? Or about the larger trucks—up to 6 tons capacity?

KISSELKAR TRUCKS

SEVEN SIZES

Owners of KisselKar Trucks are invariably truck enthusiasts. We would like to have you know their experiences.

We would like to have them tell you of the great dependability and economy of their trucks.

We would like to have them tell you of the vastly improved service over horses, of the new consumers won through increased delivery area and the general advertising value of their vehicles.

Ask us who are using KisselKar Trucks in your line—then write to them. Also say you would like a copy of our new portfolio with 500 illustrations—it will interest you.

Kissel Motor Car Company
546 Kissel Ave. - Hartford, Wis.

New York, Boston, Philadelphia, Chicago, St. Louis, Milwaukee, Minneapolis, St. Paul, Dallas, San Francisco, Los Angeles, Oakland, Cincinnati, Omaha, Cleveland, Detroit, Toledo, Columbus, Rochester, Buffalo, Baltimore, Pittsburgh, Duluth, Dayton, New Orleans, Nashville, Hartford, Conn., New Haven, Troy, Norfolk, Providence, Marshalltown, Iowa, Madison, Montreal, Toronto, Calgary, Victoria and three hundred other principal points in the United States and Canada.

by writing the W. E. Dunn Mfg. Co., 415 24th Street, Holland, Mich. A Chicago office is maintained at 624 S. Michigan Avenue.

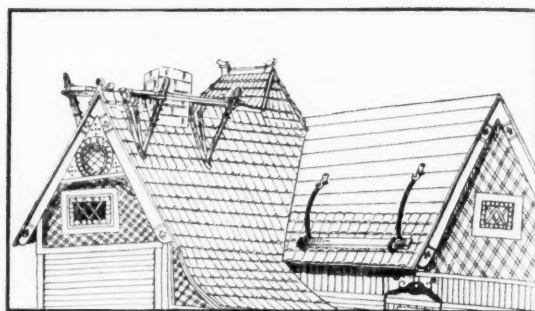


The Neville Scaffolds

We illustrate here two of the latest additions to the builders' equipment. The Neville Adjustable Scaffold for chimney building does away with the old way; of building a new scaffold for every chimney, with the consequent loss of time, waste of material and damage to the roof.

This scaffold can be used on any pitch of roof and on the ridge or side of the roof without the use of a single nail, and is used over any kind of roof covering. It is simple in construction, and will last a life time.

The Neville Shingling Bracket is an invention born of



Two Types of Neville Scaffolds as Used in Roof and Chimney Work.

necessity. It consists of a steel rod arched upward in the middle to allow the laying of the shingles under it and both ends resting on the roof, the lower end formed in a loop to hold a 2 by 4 to support the workman and the upper end with a reversible hook to secure it to the roof. Can be used on a close sheathed roof or an open one, over any kind of covering.

Circulars giving full description of either scaffold will be sent on request by The Neville Manf. Co., Kewanee, Ill.

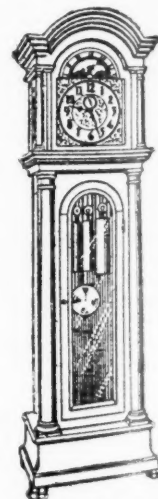


Want to Build a Clock?

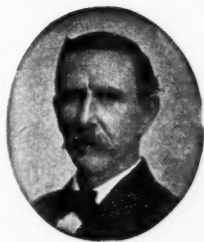
Men who have made a success of the winter work problem should be glad to look into other propositions that will help them to increase this winter business. The Clock Company, 1655 Ruffner St., Philadelphia, Pa., are interested in the men who have made good on their winter work. They have a proposition to offer to carpenters and builders that they believe will help them to a large extent in this particular work.

They handle works for all kinds of clocks and furnish blueprints so that fine looking clocks can be built. They will also furnish the more complicated parts of the case or the entire case in knock down form if a man's shop facilities are not able to handle this work. By this arrangement anyone—amateur or skilled workman—can build these clocks.

They ask the opportunity of showing our readers the possibilities of this field. Full particulars will be sent out on request. The making of fancy pieces of furniture such as this should prove an attractive side line to a lot of our readers. There is always a market for work of this kind if it is done in the right way. The plans will help an energetic man to do this.



Make This Hall Clock.



Let me design your CHURCHES

My experience in church work is valuable to you. My knowledge of church architecture assures your getting the most approved, up-to-date designs. The work I have done for hundreds of Builders, Contractors, and various Church Boards throughout the country proves that I can do satisfactory work for you. I can plan a church to meet your needs.



Presbyterian Church

Minden, Nebr

I CAN SAVE YOU MONEY



First Congregational Church

York, Nebr.

by furnishing plans and specifications at the lowest possible cost. Tell me what you need. Information is free. You pay me only for actual services. Let me show you what I can do for you. Fill out the coupon and mail it. You pay nothing in advance fees and you will not be obliged to give me the work unless I show you that I can do it better, quicker, and at a smaller cost than anyone else.

ALFRED W. WOODS,
—ARCHITECT—

LINCOLN

NEBRASKA

----- TEAR OFF THIS COUPON and MAIL -----

Alfred W Woods, Architect,
Lincoln, Nebraska.

DEAR SIR:—

We propose building a church as per details given below. Please send us information as to what architectural service you can furnish us. It is understood that this information costs us nothing.

Proposed Cost.....

Name

Frame, Brick or Stone.....

Address

Denomination.....

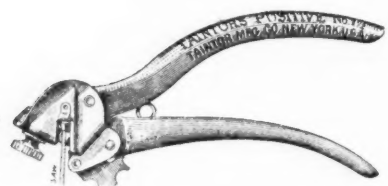
Seating Capacity.....

Town and State.....

Size and Location of Lot.....

Price of Taintor Saw Set Reduced

The unique method adopted by a manufacturer to contribute his share towards giving his carpenter friends a Merry Christmas is by reducing the price of a tool during the



The Taintor Double Plunger Saw Set.

holidays. This is being done this season by a well-known saw set manufacturer who is offering his latest model tool for the year at a special price.

There is no better Christmas gift than a saw set for the carpenter's wife to give her husband, for the carpenter to give his fellow workmen or for the mechanic to purchase for himself.

In order that carpenters may have an opportunity to obtain a practical Christmas gift at the lowest price and with the least trouble, the manufacturer of the Taintor positive saw sets offers to the readers of this publication their latest No. 7½ double plunger saw set for considerably less than the regular price. The double plunger gives two plungers in one—one side for fine teeth and the other for coarse. The offer at this special price expires December 31, 1915.

Turn to their announcement on another page or send a postal to the Taintor Manufacturing Company, Department B, 113 Chambers Street, New York, and you will receive full particulars.



Name "All-Year Car" Exclusive

ORIGINATOR OF THE ALL-YEAR IDEA SAY COMPETITORS MUST REFRAIN FROM USING TRADE NAME

The advent of the convertible car has developed an interesting situation. Kissel brought it out last year and applied a

name and gave it wide newspaper publicity. The public responded and this year other manufacturers began to make detachable tops. Then something happened. The trade name Kissel originated and applied, the "All-Year Car," began to creep into the literature and advertising of other manufacturers. At this juncture Kissel stepped in and said: "Stop!"

"We expected competitors to follow us on the 'All-Year Car,' as they did on the divided front seat and the two-door body," says George A. Kissel, president of the Kissel Motor Car Company, "but we must object to the use of our trade name. We designed and brought out the convertible car in 1914, and to make the identity of our product doubly sure, we applied the trade name, 'All-year Car' and spent thousands of dollars to let the public know about it."

Kissel conceived the two-door corridor car, which is now being generally used by many automobile manufacturers. The "All-Year Car" is the natural evolution of the two-door body. The Kissel "All-Year Car" is tremendously successful. It solves an economic question in supplying a single car for continuous use thruout the year—as an open car in summer, and as a closed car in winter.



Laying Brick from Scaffolds

In laying brick from a scaffold it often happens that the wall becomes sprung because of the weight of the scaffold.

The accompanying illustration shows a scaffold that can be erected without this danger and with strength enough to insure it against collapse when the men are at work. Contractors all over the country have commented on the fact that their men do more work than formerly because they are not afraid of the scaffold's falling.

The "Trouble Saver" scaffolds, as they are called, are

Learn to Be a Draftsman and Draw Your Own Plans

By means of these two books the contractor, builder or carpenter can advance by easy steps from the first principles of drafting room practice to the complete work of an architect's office, including drawing to scale, tracing, detailing, lettering, rendering, designing, etc. He can combine the work of the architect and builder. He will learn not only how to plan the structure, but how to lay out the work, specify the materials and finish, make the contracts, and take complete charge. A complete set of plans with every dimension, all sizes of windows, doors, etc., is shown in these books. This serves as a guide as it shows the process from the preliminary sketch to the finished plan.

Radford's "Mechanical Drawing" is a book of 272 pages, with 165 illustrations, and a supplement showing perspective views and floor plans of 41 brick, cement and frame residences.

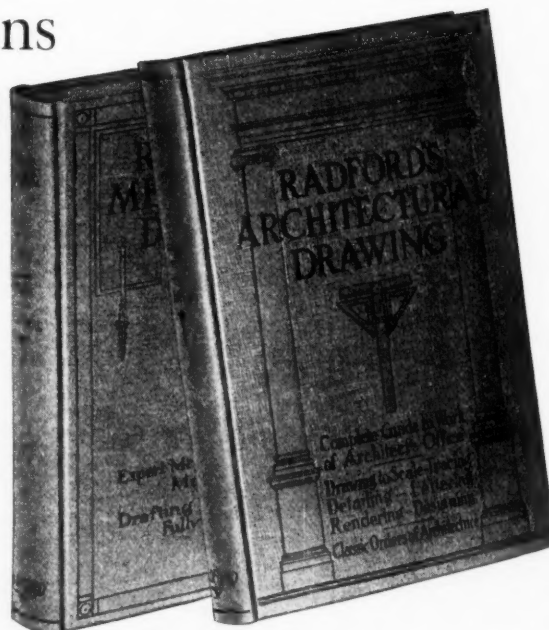
Radford's "Architectural Drawing" is a book of 304 pages, with 147 illustrations and a supplement showing perspective views and floor plans of 41 brick, cement and frame residences.

Each book is printed on high-grade paper, bound in cloth, is 6x9 inches and has a beautiful illuminated cover.

Don't Depend on Another Man's Brains

Develop your own ideas. Be in a position where you can work a customer's hazy suggestions into a tastefully arranged, complete plan, showing all dimensions.

One of these books and a year's subscription to the American Carpenter and Builder for only \$2.00, the regular price of the magazine alone. Both volumes and a year's subscription for \$3.00.



American Carpenter and Builder
1827 Prairie Ave., Chicago

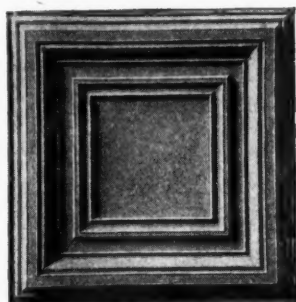
It Is Cheaper to Prevent Fire Than Put It Out

There is a strong tendency toward greater safety in construction through the use of fire-retarding building materials. Building and repairing operations are now being planned and you have a splendid opportunity to not only profit yourself, but to promote the better building movement by recommending—safe, sanitary, fire-retarding

"BERGER'S"
Classik
STEEL CEILINGS

At the recent official fire test Steel Ceilings resisted for one hour and ten minutes (entire duration of test) the extreme average heat of 1366°. Wood Lath and plaster fell in twelve minutes. Think of the difference!

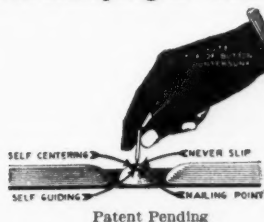
Many a building has been saved because steel ceilings prevented a blaze from spreading.



Colonial Panel No. 4056

Berger's "Classik" Steel Ceilings are safe, sanitary and fire-retarding and on account of our patented bead and button construction the cost of erection is reduced from 25% to 40%.

No Tamping or Calking]



We have over 500 designs, including every period and style of architecture. The patterns range from the highly ornamented to the plain stately designs. In decorating, charming plastic effects are obtained at a cost much lower than hand fresco work of equal character. Write for our design book D. A. B.



Our New "Berco" Design

The design shown above is our latest. Note its simple dignified lines giving an especially attractive tile effect. Other popular designs are illustrated in colors in our new Metal Shingle and Spanish Tile Book. The book is free to contractors and carpenters who want to give their customers safer and better roofs. Ask for special Ornamental Roofings Book E. A. B.

The Berger Mfg. Co., Canton, O.

BRANCHES: Boston New York Philadelphia Chicago St. Louis Minneapolis San Francisco
Export Dept.: Berger Building, New York City, U. S. A.

Specify "CREO-DIPT" Stained Shingles

for ROOFS and SIDE WALLS

They will save your client continual roofing and painting expense and give any desired combination of soft color shades that last a lifetime. One never tires of "Creo-Dipt" colors.

"CREO-DIPT" STAINED SHINGLES
17 Grades 16, 18, 24-Inch 36 Different Colors

We select best cedar shingles, preserve them by our special process in creosote, and stain them any color desired. They last twice as long as brush-coated shingles or natural wood. They do not curl up or blow off. Save muss, uneven colors and waste of staining-on-the-job.

Write today for colors on wood and your book of "Creo-Dipt" Homes in all parts of the country. Get your lumber dealer to carry in stock standard shades of our greens, reds and browns.

STANDARD STAINED SHINGLE CO., 1028 Oliver St., No. Tonawanda, N.Y.
(Factory in Chicago for Western Trade)



Architect, A. N. Oviatt, Cleveland,
for Mr. A. C. Dutton.

They Come Stained
Ready-to-lay Without waste.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

\$10 a Day--Cash

For Your Time This Winter

No Experience Required

I want 200 additional representatives at once to begin work in their home counties advertising, accepting orders and distributing my new **Vacuum and Compress Washing Machine**, which I want to introduce to every home in the country.

New principle, low price, perfection of work, ease of operation, speed—I consider this machine one of the **most brilliant inventive achievements of the present age** in household necessities. **Just out.** No competition. It is selling faster than anything ever heard of—**going like wildfire.** Every home a customer—every customer a friend.

PROFITS START FIRST DAY

No waiting or guessing. You need no experience. **No charge for territory.** Just follow easy instructions. Failure impossible. The price of only \$1.50 each makes a sale at every house—**cash business at 200 per cent. profit to you right on the spot.**

The biggest opportunity ever offered to hustlers—men and women—who want to make money quick and fast.

SUCCESS ASSURED

No talking necessary—just show the machine—a one-minute demonstration gets the order in your book—and every time you deliver a machine your bank account gets a hearty meal and grows with exciting rapidity. Wouldn't you like to be able to draw your check for \$5,000 at the end of this year, and all from new money earned in cash?

Frank Greene sold 45 first three days—**profit, \$45.** F. Hughes, of San Francisco, **made \$21 first 8 hours.** T. F. Speakman at Gainesville, Ala., just took 36 machines right out and left one on trial at every home along the street. **Not a one came back on his hands**—every one was kept and paid for in cash—**profit, \$36**—and he didn't have to use a single word of argument.

They virtually sell themselves. L. M. Parker, of Glen Allen, Ala., put out 108 machines the same day. All were kept and paid for but one—**profit, \$107.** Can you beat that? **How would you like to get behind a job like that?**

Mail Your Application Today

This is my warning to you, if you want this position—**don't delay.** Get your county under contract. To wait means possibly to lose. Write me a letter or a postal card **today.** If you are honest and willing to work **I will give you the position.** Do not let someone else get ahead of you. I want agents, general agents and managers. **Write today**—then you will have done your part. **Do it right now.**

Address

H. F. WENDELL, Pres.,

Wendell Vacuum Washer Co.,

900 Oak St., Leipsic, Ohio



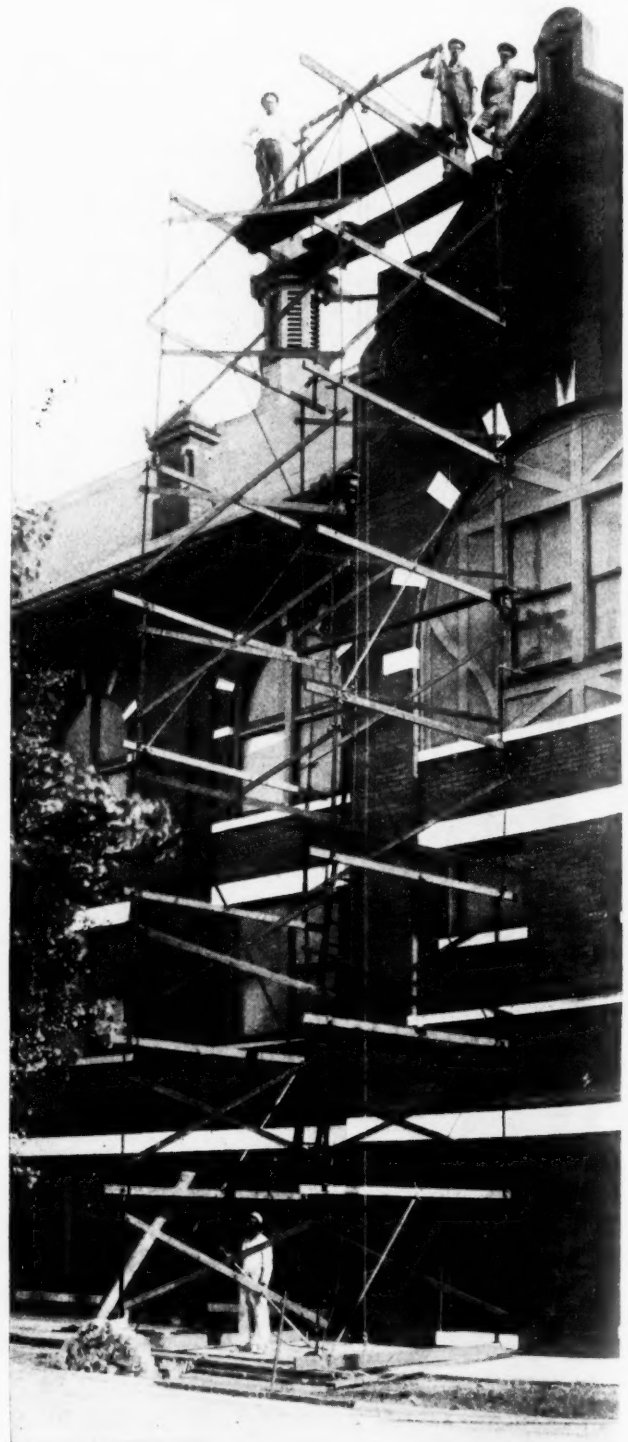
Selling Price
\$1.50

Every machine sold on money back guarantee. A child can use it. Abolishes labor of wash day. Women discard \$15 and \$20 machines for it. Weighs but two pounds—washes in three minutes. **Works like magic.** Every woman eager to buy—every buyer glad to tell others. Start today.

made in sections of 4½ feet, and are bolted together so as to form a scaffold as high as is needed. Another feature of their construction is the running board for the hod men and the wheelbarrows which is placed 4 feet below the scaffold that the masons work on. This makes for more speed, as the various workers do not get in each other's way.

The illustration shows the scaffold as applied to a tall building with several sections in place.

This building help is made by The Steel Scaffolding Co., Evansville, Ind. They will be pleased to send our readers complete details and prices.



"Trouble Saver" Scaffolds for Erecting Brick Building.



CONTRACTORS—

Are you going to secure your share of the barn contracts to be awarded in the near future? You will agree with us that this work is of a profitable nature, and especially so in view of the assistance we offer. Our Free Service Bureau is maintained for the benefit of all those interested in better barn construction and equipment. Floor Plans are submitted without expense or obligation, and any additional information is promptly furnished upon application.

Porter Steel Stalls, Cow Stanchions, Litter Carriers, Barn Door Hangers, Hay Carriers, Forks, Hay Slings and other tools are acknowledged leaders everywhere.

Investigate and determine the prospective barn builders in the community, then call on us for any assistance relative to interior arrangement, construction, ventilation, etc., and see to what extent Porter Service serves. New Barn Plan Booklet and complete catalog furnished upon receipt of your letter containing the names of parties who expect to build or remodel barns. **Write today and learn more about modern barns and equipment.**

J. E. PORTER COMPANY, 620 FREMONT ST., OTTAWA, ILLINOIS

CARPENTERS AND SHOP MEN—

RETAIL PRICES

Stationary Engines
 2 H-P., \$ 35.10
 3 H-P., 52.65
 4 H-P., 70.20
 6 H-P., 100.00
 8 H-P., 140.40
 12 H-P., 210.90

Portable Engines
 2 H-P., \$ 40.15
 3 H-P., 60.75
 4 H-P., 83.35
 6 H-P., 130.00
 8 H-P., 176.80
 12 H-P., 248.00

Engine Saw-Rigs
 4 H-P., \$128.25
 6 H-P., 155.90
 8 H-P., 205.00
 12 H-P., 272.50
 (F. O. B. Factory)

**5 YEAR
GUARANTY**

Here is a fast seller at the retail prices shown at the left. Our liberal dealer's discounts from these prices make you a good profit. Complete line of sizes and styles as here listed. With this agency, you can do the engine business of your trade territory. Write us now while your territory may still be open.

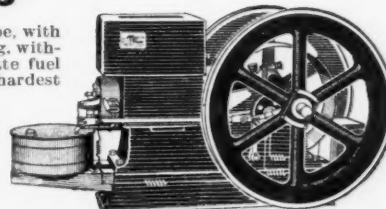
Keco ENGINES
Gasoline, Kerosene & Gas

Through and through high quality. Center-firing, valve-in-head type, with automobile style ignition. Safety spark-shift for easy and safe starting, without cranking. Best of materials and workmanship, with up-to-date fuel saving design of engine. Simple to operate, and durable under the hardest wear, giving even speed and continuous power.

Sold on Trial Every engine fully guaranteed for durability, capacity and all around efficiency. Write for our dealer's proposition under which you can handle this line without risk under our buy-back-in-90-days' selling plan. Let us show you the profit in this agency.

Manufacturers Engine Co. 1629 Crystal Avenue
 Kansas City, Mo.

**Sell
This
Engine!**



Don't do without an engine Now!

It is cheaper now to have a WITTE engine than to do without. Easy to start, without cranking; easy to manage; and easy to own on any suitable, reasonable terms of payment during a year.

Fuel-Saving

WITTE ENGINES

Gasoline, Kerosene, Distillate and Gas

Stationary engines for prices averaging less than \$17.50 per horse-power. Eight sizes, stationary and portables, four sizes saw-rig outfits. Guaranteed high quality—through and through—as durable as superior design, the best of materials and workmanship can make. Get my engine facts before decide to get any engine.

Book Free: My book, "How to Judge Engines," will show you how to save and make money in getting and using an engine. Write for it today, addressing nearest office.
ED. H. WITTE, Witte Engine Works,
 1778 Oakland Ave., Kansas City, Missouri.
 1778 Empire Bldg., - Pittsburgh, Penna.

Look at These New Prices!

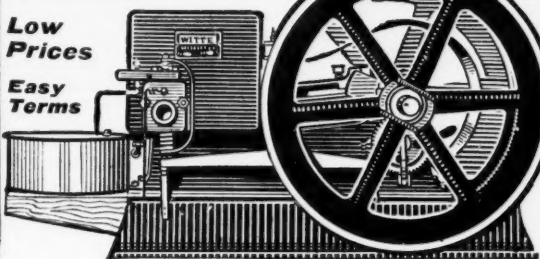
(F. O. B. Factory)

SIZE H-P.	STATIONARY ENGINES	PORTABLE ENGINES
2	\$ 34.95	\$ 39.95
3	52.45	60.50
4	69.75	82.75
6	97.75	127.75
8	139.65	174.65
12	197.00	237.00
16	279.70	329.70
22	359.80	412.30

Engine Saw-rigs Complete.
 4 H-P., \$124.25; 6 H-P., \$152.25
 8 H-P., 202.15; 12 H-P., 267.00

Let me send you an engine to earn its own cost, while you pay for it.
Ed. H. Witte.

**Low
Prices
Easy
Terms**



**5-Year
Guarantee
Cash or
Easy
Terms**

**LESS THAN
\$150 Per Horse Power
WITTE
ENGINES
Why Pay More**

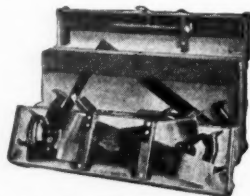
WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Indestructo Carpenters' Tool Cases

No doubt you have wished many times that you had a tool case lighter and handier than your old wooden chest. Wedell & Boers, 157 Jefferson Avenue, Detroit, Mich., make such cases, known as the "Indestructo" carpenters' tool cases.

These cases are neat, light and strong—made in suit case style, and will carry just as easily. You save all dray and cartage expenses and are never delayed in your work, as you can take the case with you on trolley cars or trains. If you wish to check it, don't fear; it will stand the roughest wear, as it is practically indestructible.

No carpenter can build a case as good and as strong as the "Indestructo" for the price; the cost of the material will be as much, without counting labor.



Tools Carried in Indestructo Case.

Says "Ceil-Board" Can be Wallpapered

In a recent article in this paper it was stated that the manufacturers of wallboard do not recommend the use of wall paper for the reason that it invariably cracks at the panel joints.

Mr. Schaefer, manager of the wallboard department of the Philip Carey Company, 1021 Wayne Avenue, Lockland, Cincinnati, Ohio, takes exception to this statement and says that "Ceil-Board" is recommended by them for all kinds of interior decorating, including papering. He states that "Ceil-Board" is so thoroly water and dampproofed that it will not shrink or swell in any way and consequently will not crack wall paper along the panel joints. It has been tried in this method of construction and has shown its ability to hold

the wall paper surface in fine condition.

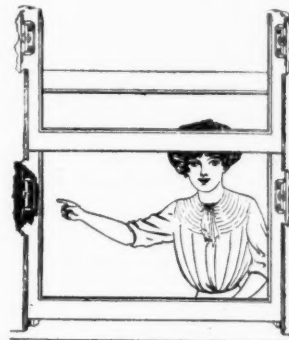
"Ceil-Board" can be obtained in a plain surface that is suitable for all kinds of decorating or it can be had in a wood grain surface that does not have to be decorated.



Winter Profits in Sash Holders

Contractors, carpenters and builders amongst other things have the job every fall and spring of putting on and taking off storm windows, doors, etc., thus meeting various homeowners in the smaller towns who undoubtedly have a hundred and one things which can be done by Mr. Mechanic. Thruout this country and among the readers of the AMERICAN CARPENTER AND BUILDER the opportunity exists for putting some device in the many windows which have old-fashioned stops of wood and no weights or balances of any kind.

Automatic sash holders can be mortised into any sash or frame and the sash will operate up and down, staying wherever put, and no pocket frames are necessary. In addition to making for comfort, they absolutely prevent windows from rattling. A sample set of holders will be sent prepaid for a nominal amount and if at the same time you state how many windows you have to equip, the Automatic Sash Holder Manufacturing Company, 52 Church Street, New York City, N. Y., will quote you a price which will allow you to make a good profit. Kindly state about the weight of the sash when addressing them.



Window Equipped for Service with Automatic Sash Holders.

Mr. Builder, here's a chance to make good money all this winter



Absolutely Odorless

In use, the closet is absolutely odorless. A vent pipe provides air circulation. Ro-San Chemical destroys life matter and renders contents harmless.

We offer to every carpenter who is a good business man, an opportunity to turn the dull season into a prosperous, money-making time—a chance to do a little work at odd times in any month in the year and make a handsome profit. Thousands of builders are working with us—thousands are turning their business ability to their own advantage. Read what some of them say in the next column.

Ro-San Indoor Closet

This is a modern, healthful, comfortable, sanitary fixture that you can introduce to your customers, at a profit. It eliminates the vile, germ-breeding outdoor privy. This is a chemical closet—efficient and odorless—that may be installed right in the house. The old privy breeds disease in summer and is cold and unhealthful in winter. The Ro-San Indoor Closet brings health, comfort and convenience to the home, the office, school, factory. Endorsed by health boards. Recommended by physicians.

Easy to Install

Set it up in hall, spare room, clothes closets—anywhere. Comes complete, ready for business. Easy to set up as a heating stove.

Our Guarantee

We back this closet with our guarantee—If it doesn't satisfy your customer, we'll buy it back. It has to make good. The buyer is the judge.

Our Proposition to You

We distribute these closets through local builders. We don't expect our agents to peddle them. We establish you in a dignified paying business. We assist you in building up that business. Write today for catalog and our agent's proposition—write before some other fellow gets the exclusive agency in your town.

ROWE SANITARY MFG. CO., 212-C Sixth St., DETROIT, MICH.

Read What These Carpenters say:—

I haven't been able to put in much time on your proposition, but I enclose seven orders. These will help sell others who are waiting to see how the closets work.

ED. LAMEN,
Flora, N. D.

I set my closet up in my office and sold it the next day. Enclosed find six more orders.

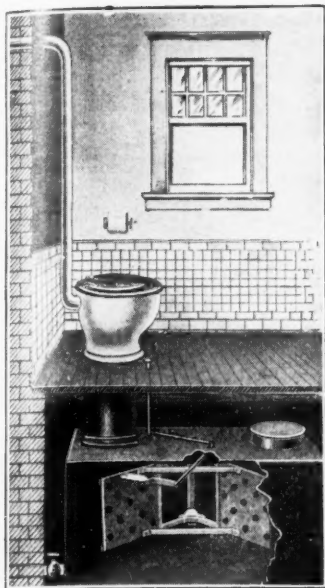
S. W. CASSIDY,
Herkimer, N. Y.

Enclosed find five orders. One is for a sample for myself. The other four I sold right from your catalog.

C. F. BERTHELSEN,
Clear Lake, Iowa

Please hurry shipment of closets. I sold two today without doing any taking at all. They sell themselves.

C. B. LA HUIS,
Grand Rapids, Mich.



Make Big Money This Winter—

Cold weather is now here. You can make big money this winter selling and installing Wolverine Chemical Closets. A product right in your line. A convenience every rural home and public building should have. Our special proposition shows you how to cash in big, on your spare time.

Wolverine Chemical Closets

are the greatest convenience ever offered rural residents. Their popularity spreads like wildfire. Here is an indoor closet requiring no water supply or expensive plumbing. A simple, practical, economical, sanitary and odorless chemical closet at such a price that no home cannot afford to be without it.

Sells Easily to Schools, Churches, Lodge Halls, and

All Homes in Small Towns and Rural Districts

Go after this business now. Big profits. Make money not only on sale but also on installation. This is a legitimate proposition backed by an ironclad money back guarantee. Endorsed by prominent health authorities.

We want you to act as our exclusive agent in your territory. There is no time to lose. Write us at once for complete information and Special Proposition to Carpenters and Builders.

In addition to the vault system shown above we also make a commode type outfit.

DAIL STEEL PRODUCTS CO.

600 Main Street, : : : : Lansing, Michigan

Contract Worth \$2,500

Mich.

About six months ago I visited a relative who had a Wolverine Chemical Closet installed in their farm home. I saw the great possibilities of selling an outfit of this kind in villages and small towns where they have no sewers, also to people living on farms and in rural districts. I got in touch with the Dail Steel Products Co., and secured a contract for a county agency. That was about six months ago. I now consider my contract worth at least \$2,500.00; in fact, I would not trade my business for any plumbing business in the county.

At first the sales did not come very fast, but after I had one or two in a locality, I found it very easy to sell nearly everyone in the neighborhood. I have one little town of five or six hundred people, where I have installed fourteen outfits. I have sold nearly every cottage at some of the summer resorts, also a good many public buildings, schools, etc.

I have every customer boosting the business, and have as many prospects and inquiries as I can follow up. I am satisfied that the Wolverine Chemical Closet is a solution of the closet problem for the village and farm home and any carpenter or builder who gets the agency for these outfits can soon build up a business that will be worth more than any building business in his territory.

Yours truly,

Geo. H. Hindelang.



A Simple Sanitary Inside Closet

THE WICHITA Chemical Closet

Any Carpenter and Builder can install these closets in a few hours. No sewer, no water, no cesspool, no plumbing, no odor. Eliminates disagreeable and unhealthy out-houses. Sold on Guarantee.

Live Agents Wanted

In every locality—Carpenters and Builders make the best agents we have. Special prices and big profits to you—Write for particulars about this wonderful system and our liberal proposition.

Modern Sanitation Co.
153 N. Market St., Wichita, Kansas

What This Contractor is Doing - YOU Can Do

This letter, from our Saginaw, Mich., Contractor-Agent, is typical of what hundreds in your line are doing—and you can do the same with the

Kaustine Chemical Closet

Mr. Pharis writes: "I took the agency for Kaustine Closets six months ago. I have sold 41 outfits—30 to schools, balance to private parties. Am planning to spend my entire time next year. A \$50 Kaustine Closet will add \$100 to the selling price of your house."

The built-in-the-house Chemical Closet is here to stay, for it gives the rural home, school, factory, church and hotel all the advantages of plumbing and city conveniences—with no plumbing bills or repairs.

How We Help You

You're protected on the sale in your locality—you get all the inquiries in your section—from our national advertising—reaching 10,000,000 readers every month. We circularize your prospects. Any wonder that Kaustine agents make \$100 to \$350 monthly?

Note This

originators and patentees of Kaustine—and the Underground Tank Chemical Closet.

Get Our Proposition—Write Today, Right NOW!

Kaustine Co. Dept. 1096 Buffalo, N. Y.

Also 60 Colborne Street, Toronto



A Revolving Chimney Top

that is simple, durable, and easy to attach. Filled with perfectly adjusted Ball Bearings so that the slightest breeze turns the hood to the wind, causing a suction at the opening, drawing the smoke out, and making a strong draft for the chimney.

"Best" Chimney Cap

Protects the masonry and forms a solid base for a pipe extension.

Write for our circulars TODAY!

STERLING FOUNDRY COMPANY
8 Avenue A, - STERLING, ILL.





ANNOUNCING

The New

Flex - A - Tile DIAMOND SLAB Asphalt Shingle

Cheaper Than Wood

THE latest achievement in Asphalt Shingles—"Destined to Roof the Nation's Homes." Every live carpenter or contractor should write us *at once* for full particulars and samples of Flex-A-Tile Diamond Slabs.

Save 35% Freight

Save 35% Nails

Save 75% Labor

These are but three reasons why you and "Diamond Slabs" should become acquainted. There are other reasons—but let us send you the complete story. Be the first in your neighborhood to introduce Flex-A-Tile Diamond Slab Asphalt Shingles. **WRITE NOW!**

The Heppes Company

1010 So. Kilbourne Ave., Chicago, Ill.

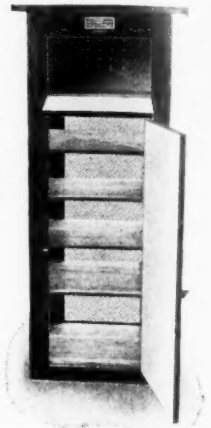
Utility Wall Board
Standard Flex-A-Tile Shingles
No Tar Asphalt Paint
Rubbertex Roll Roofing

OTHER GUARANTEED HEPPE'S PRODUCTS

Sanitary Automatic Dumbwaiters

Any up-to-date architect or builder will tell you that much work in little time is requisite of the fast age in which we are living. Here, The Sanitary Automatic Dumbwaiters fill the bill. The wonder is that so many houses, complete in every other respect, should be constructed without any provision of this sort. It is merely a survival of the old feeling that labor in the house is much cheaper than the mechanical devices that save it. However, a new day has already dawned in domestic affairs and the up-to-date home will soon be as thoroly equipped as our factories with every appliance that will conserve energy and eliminate lost motion.

The manufacturers, York Automatic Dumbwaiter Works, York, Pa., are pleased to announce thru our columns the 1916 models (which are now ready for delivery) will be equipped with improved adjustable bumper bars arresting all jars so that there will be no breaking of dishes, etc., in operating whatsoever.

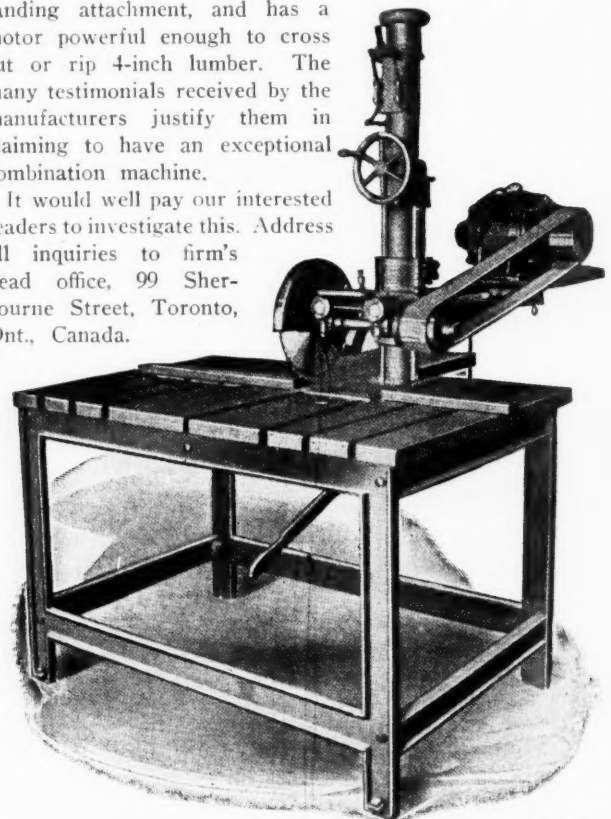


Dumbwaiter Carriage with Metal Bread Box at Top.

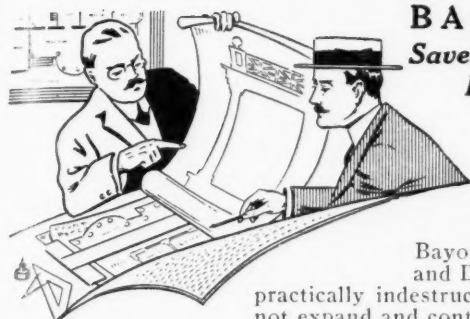
The Hutchinson Combination Woodworker

This cut illustrates a machine which should be of exceptional interest to all men in the woodworking business. It is a machine which is practically indispensable to the wide-awake carpenter. It is a portable machine, and can be set up on any job in fifteen minutes. It can be used for crosscutting, ripping, dadoing, boring, sandpapering, etc. In cross cutting, the saw is pulled through the lumber. It moves very easily, as the rods are fitted with ball bearing rollers. The machine swings on the post, so that it can be set and locked to cut at any required angle. The saw can also be raised 8 inches, so that practically any thickness of lumber can be handled. It is equipped with rip saw, cross cut saw, boring attachment, sanding attachment, and has a motor powerful enough to cross cut or rip 4-inch lumber. The many testimonials received by the manufacturers justify them in claiming to have an exceptional combination machine.

It would well pay our interested readers to investigate this. Address all inquiries to firm's head office, 99 Sherbourne Street, Toronto, Ont., Canada.



General Arrangement and Parts of the Hutchinson Combination Woodworker.



BAYONNE Saves Your Client Repair Costs

Bayonne Roof and Deck Cloth is practically indestructible. Does not expand and contract as even zinc or copper will.

Unlike other prepared coverings, Bayonne does not peel, crack or buckle; nor does it wear out or corrode. The special process of treating highest quality duck renders Bayonne impervious to heat, cold, water and any amount of wear.

Most economical and simple to lay. Spread over the dry boards and tack on the edges only. No "setting" in wet paint. One coat of paint is sufficient for average wear.

Its neatness, effectiveness and economy will strongly appeal to your client.

Write for Sample Book "N" giving
Prices and laying instructions.

See Sweet's Page 539

JOHN BOYLE & COMPANY, Inc.

112-114 Duane Street 70-72 Reade Street

New York City

Branch House: 202-204 Market St., St. Louis

**BAYONNE
ROOF AND DECK
CLOTH**

Asphalt Shingles

Make 'the
Efficient
Roof

YOU are putting an extra value into a house when you use Asphalt Shingles, without increasing the cost.

An Asphalt Shingle roof will please your customer better because of its beauty, its efficiency, and its absence of leaks and repairs.

More profits for you in Asphalt Shingles, too. Fewer to the square means faster laid—the labor cost saving becomes *your* profit.



Get This Money Saving Book

It tells you about "The Roof Distinctive" and will help you to larger profits and handsomer structures.

Asphalt Shingle Publicity Bureau

855 Marquette Building, Chicago



ASK THE MAN WHO
KNOWS ROOFING

"Well Sir, my advice as to the best kind of covering is
CON-SER-TEX"

"I've used it for roofings, porch-floors, sleeping verandas and bungalows. It gives continual satisfaction."

Con-ser-tex is a specially woven canvas roofing, chemically treated to preserve the fibre from mildew and the detrimental action of the oil in paint. It is water-proof, weather-proof, rot-proof and wear-proof.

Costs very little.

Is easy and inexpensive to lay.

Makes a neat, smooth, durable surface.

Will not leak, rot, stretch or shrink.

Better secure complete information and samples from

William L. Barrell Co., 8 Thomas St., New York

Chicago Distributors: Geo. B. Carpenter & Co., 430-40 Wells St.

California Distributors:

Waterhouse & Price Co., Los Angeles.

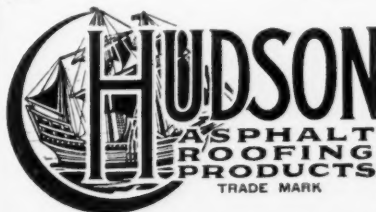
The Pacific Building Material Co., San Francisco.

¶ The real value of a well-known Quality Brand like "HUDSON" was strikingly illustrated recently, when one of our dealers nearly lost a good customer through no fault of his.

¶ The dealer sent us an order for a carload of Hudson Shingles. In loading the car, some boxes that had not been stamped with our Hudson trade-mark was included. The dealer did not notice it and sold 100 boxes of Hudson Shingles to the customer which were delivered upon receipt of the car. The customer immediately 'phoned the dealer and said: "I bought 'Hudson Shingles,' the kind all my neighbors use and recommend, and you can't palm off any of that stuff on me."

¶ Fortunately most of the car was branded Hudson, so the dealer took back the 100 boxes that were unlabeled—and delivered boxes branded Hudson and the customer was satisfied.

¶ Write your name in the coupon below, and we will send you samples of Hudson Shingles, the kind that the people want, and copy of our book—"Shingling and Roofing"—free, post-paid.



**Asphalt
Ready
Roofing Co.**

9 Church St., Room 453
NEW YORK, N. Y.

ASPHALT READY ROOFING CO.,

Send samples of HUDSON SHINGLES and Booklet, "Shingling and Roofing," with no expense to me.

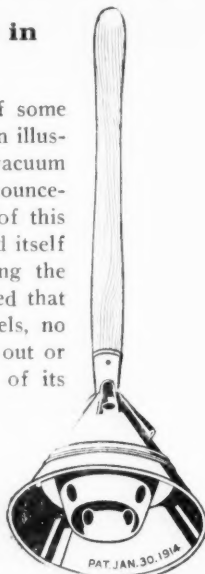
Name

Address

Simplicity Marks Genius in Invention

Not infrequently the very simplicity of some invention gives it the stamp of genius. An illustration of this fact is in the Wendell vacuum and compress washing machine, an announcement of which appears on another page of this issue. This machine is said to have proved itself a marvel of speed and efficiency in doing the family washing and is so cleverly designed that there are no moving parts, no cog wheels, no valves—in fact, there is nothing to wear out or get out of order in any way. Because of its simplicity and effectiveness, it is claimed that it is the fastest selling washing machine that has ever been invented.

These machines are made by the Wendell Vacuum Washer Company, 900 Oak Street, Leipsic, Ohio. They are offering an agency proposition to builders and full details and particulars can be secured from them.



The Simple Construction of the Wendell Vacuum Washer.

New Styles in Birch Trim

No other feature of a building proclaims the period of its construction so definitely as the style and method of finishing the trim. Architects who design homes have perfected styles of trim that might well be called by their period names, had building adopted such names for styles in residence structures.

Of late years much attention has been given to the work of perfecting methods of finishing the different woods, employing the particular kinds of treatment that is best adapted to the kind of wood used.

The most distinctive treatment given birch is known as the Silver Gray finish. This is the name of a justly popular stain which is applied to the wood and subsequently waxed or varnished. It gives to an apartment an air of cool cleanliness that is very pleasing.

Another popular method of finishing birch trim, and one now much used, is to coat the plain surfaces with white or gray enamel and stain the window stools and the moulding on the door caps dark mahogany.

In stair work the risers, balusters and base are enameled and the rail, sometimes the newel posts, are stained mahogany. The idea is to use sufficient color to break the even effect of the enamel and to give the room a distinctive appearance.

Dutch Brown also is being employed extensively. This treatment, waxed or varnished, brings out the figure of rotary cut birch veneer to excellent advantage.

Birch is the one native hardwood of high physical qualities that give the user choice of many excellent wood effects. A house trimmed with birch may be finished in almost any way the owner elects.



A Single Roll Floor Surfer

The American Floor Surfacing Machine Company have been handling in the past three types of machines. One is the "Big American," for wood floors, and the "American Champion" and "American Cove Base Polisher," for cement, tile, marble and composition floors.

They are now offering a new design for wood floor finishing. This is the "American Universal" and is made with a single roll. It is equipped with a motor that drives the roll at 725 revolutions per minute. A vacuum cleaner which is placed behind the roll gathers all the dust and stores it in a bag. This allows the use of this floor surfer under all conditions, as it will not raise the dust.

Plenty of Work This Winter—
If You Own a

BERLIN

Portable Woodworking Mill

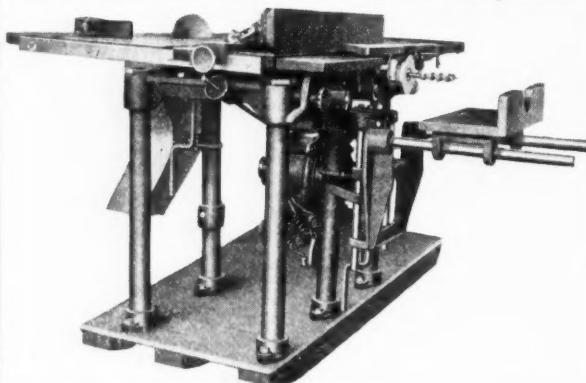
A man with this valuable piece of equipment can do any number of things during the slack season. He can make all sorts of interior improvements—such as built-in side-boards, medicine cabinets, stair work and cabinet work. He can also be getting ready for next year—making sash and doors, exterior and interior trim, etc. Many Builders have paid for this machine and made a handsome profit, too, during the winter season.

A Machine for all Purposes

The BERLIN heavy duty Portable Saw Rlg consists of a Rip Saw, Cross Cut Saw, Dado Saw, Grooving Machine, Jointer, Jig Saw, Boring Machine, Sander and Emery Wheel. It comes equipped with either a gasoline engine or electric motor mounted on its own base. It is easily moved from job to job and is strong and rigid. Guaranteed for two years.

Write for Details and Full Information Today

SCHAEFER MFG. CO., Berlin, Wis.



A page of Bargains

The lowest prices obtainable on Mill-work.

Roll Roofing
2-ply, 65c per roll.
3-ply, 85c per roll.

Bungalow "B"

A very pleasing design in a door.
Only \$2.00

Stair Newel No. 101

8" x 4" Yel. Pine \$2.29.
Oak \$2.50.

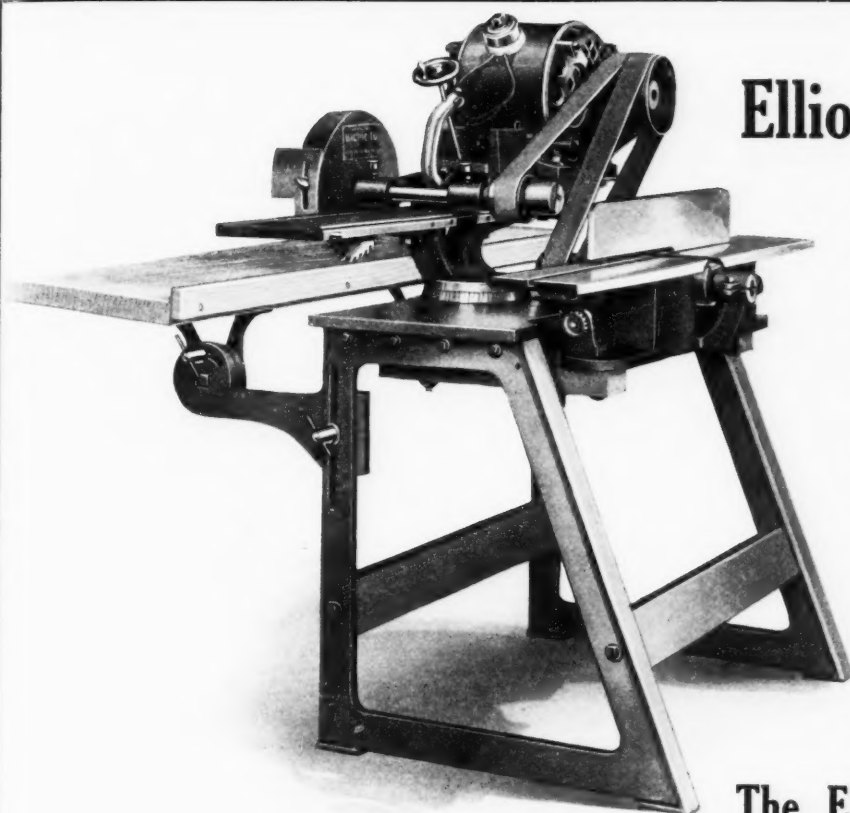
Mantel No. 1295

4' 5" high, 5' wide.
Tile Opg. 42" x 39", Profile 3", Columns 4 1/2"

Wht. Wood 3 Coats Wht. \$10.87
White Wood Enam. \$19.37

Send for our catalogs on Mantels, Sash, Doors, Roofing, etc. It will pay you.

The Huber Builders Material Company,
45-49 Vine St. Cincinnati, Ohio



The No. 3 Elliot Woodworker

has many outstanding features that will appeal to the progressive Builder. **The Elliot Woodworker** is portable and can be taken right to the job and will save 20% to 30% on labor and material.

As a shop machine it is the best and most economical you can buy. Takes up but little room, runs on any house lighting current and will cut 3-inch joists, house out a pair of stair strings 16 feet long in 35 minutes, and all other dadoing, grooving, etc., required.

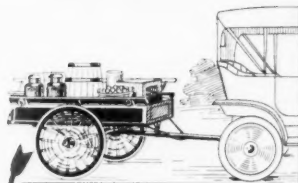
Furnished with or without Jointer Attachment.

**46 Sold in One City Alone
This Year**

Better investigate now. Illustrated circular, prices and terms sent on request.

The Elliot Woodworker Co.
2405 Woodward Avenue, Detroit, Mich.

Patented in U. S., 1914; other patents pending



MAKE YOUR CAR EARN ITS KEEP

The Lion Economy Trailer at last makes it possible to use your car for pleasure and business. Consumes less power and gasoline than to carry same load in car.

The Lion Economy Trailer

saves tires, mechanism, upholstery and paint of car. Can be attached and detached in an instant. It is a great convenience and help for the carpenter, contractor or builder. Will carry one thousand pounds.

Write today for free literature and further particulars about this low-priced vehicle. *Agents wanted*

LION BUGGY CO. Dept. C. B. Cincinnati, Ohio



THIS MACHINE WILL EARN \$20 to \$50 Daily Profit for You

Making Cement Bricks and Blocks

Factory owners are the biggest money makers in America and this machine will place you in their ranks. You can start with little capital and even without experience. This machine makes pressed cement bricks and blocks under **80,000 pounds pressure**. No tamping and easy work. It makes 1,000 blocks or 10,000 bricks daily. No burning required. Ready for the market in a few days' time. They are necessary for the



Helm DRY WALL Building System

This is the system that appeals to builders, contractors and architects. It overcomes the opposition to concrete because it offers absolutely **DRY WALL** construction. It saves money for builders, as **no furring and lathing are required**, and it makes **rigid walls** and **fireproof walls**. This is the system which is bound to get you business and give you the advantage over all other products. **\$50 and up starts you.**



**Send for This FREE
CONCRETE BOOK**

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The Trained Man

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A few years hence, then what? Will you still be an untrained, underpaid laborer, or will you be a specialist in your chosen line of work where you can earn more in one day than the untrained man earns in a week?

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The only way to keep out of the dollar-a-day class is to get the special training that will command the attention and a better salary from the man higher up. The International Correspondence Schools have shown to thousands the way to positions of power and increased salaries. They can do the same for you.

Your future is before you. Are you interested enough in it to learn how the I. C. S. can fit you for a real big job? No matter where you live, how little you earn, or what your previous education has been, the I. C. S. have a way of helping you. For over 23 years the I. C. S. have been helping young men to increase their earnings and to rise to positions that insure a better income.

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WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Prices and full descriptions of this machine can be obtained from the makers at their address: 515 S. St. Clair Street, Toledo, Ohio.



Weather Strips for Casements

The Diamond Metal Stamping Company, 626 Kerr Street, Columbus, Ohio, have an extensive line of metal weather strips including styles to take care of casement windows opening in. Several equipments they guarantee to be absolutely wind, dust and water tight.

They have recently put on the market a concealed-nail door strip which is the joy of the architect who objects to unsightly nails. It makes a beautiful job when put on the door and its cost is very small.

They are looking for responsible contractors and carpenters to act as their agents. They have some valuable territory awaiting the right man. Better write them for their agency proposition. Their folder, "The Diamond Way of Practical Weather Stripping," is very interesting, as is also their booklet, "Positive Proof from Particular People."



The "Ford" Among Woodworkers

The Wallace bench planer has been advertised continuously in the AMERICAN CARPENTER AND BUILDER for more than a year, and has been accorded an enthusiastic reception by carpenters and builders in all parts of the country.

The motor supplied is totally enclosed, a precaution most essential for machines in woodworking shops. The cutter head is of the safety cylindrical type, and its small diameter makes possible a very narrow throat opening. The tables are ground to a true surface, and can never get out of true.

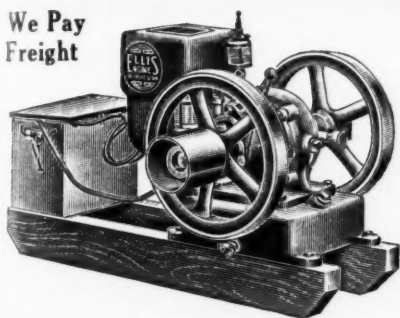


Wallace Bench Planer in Use.

The Wallace bench planer is the "Ford" of the machinery world. No sacrifice of accuracy or durability has been made to reduce its price so far below that of any other power planer. It is cheap because made in large quantities. It is cheap because reduced to fundamentals—because unnecessary parts and unnecessary weight were omitted.

The maker, J. D. Wallace, 525 W. Van Buren Street, Chicago, will continue his policy of sending the bench planer to readers of the AMERICAN CARPENTER AND BUILDER for a free trial, as this plan has worked out most satisfactorily in the past.

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All sizes for all purposes. 1½ to 18
H. P. Vertical and horizontal. Guar-
anteed 10 Years.

Don't Pay For Your "Ellis" without getting it

Every carpenter or contractor who does not use a reliable engine is paying for the engine without getting it. He pays for it in lost time, and in labor costs. You can buy an Ellis Engine out of two weeks' wages to one workman; and your Ellis will give you reliable service for many years.

Ellis Engines are America's favorite with carpenters, contractors and builders. Very compact in design; light in weight in proportion to power. Easy to operate; no cranking. Run either way; reversible while running. They work successfully on common cheap lamp oil at a fuel cost of

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for each horsepower developed. Just the thing for woodworkers, rip-saws, planers, cement mixers, hoists; in fact, for every job where power can be used. Write for free book, "Engine Facts," giving valuable information and full details of our 30 Days' Free Trial Offer, with opinions of users from all parts of the world.

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To take orders for our Knives
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"The Steel that Cuts Steel"—The "Lost Art of the Old Damascus Sword Blade" Re-discovered. We own and control the secret formula. A Written Guarantee. Photo Handles, clear as glass and tough as horn, with owner's name, address, personal photos, lodge or labor emblems. Goods "made to order"—cannot be bought in stores. Razor Strops, Hones, Hair Clippers, Shears, Scissors, Kitchen Sets, Manicure Sets, Photo Handle Fountain Pens, etc. Big Profits—Easy Selling Plan—We teach you how. Get Busy—"Xmas Order" Profits await you. Write today.

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Send \$1.00 for Sample Knife.
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Style D11 Senior Senator 2 Blades Price \$1.20

A real Business-getter

that works for years and years. One of these handsome, high-grade pocket knives with your name and address on it will close contracts when sent along with your plans and estimates. Brings business and builds goodwill. Considering the number of times a man uses a knife and the years one of these knives lasts, this is the lowest cost advertising any builder, Architect or Lumber Dealer can do and at the same time the most practical.

We have a Liberal Proposition to offer you

No experience necessary, good pay. A fine proposition for carpenters and builders. Write today for particulars. Address Dept. E.

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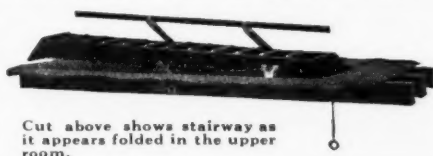
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Canton, Ohio

INVESTIGATE THIS STAIRWAY

Before making estimates on any new work, investigate **The Bessler Movable Stairway**. The only stairway which permits of quick and convenient access to upper floors without using up a single square inch of floor space in the room below.

So perfect is its
design and
construction
that a 6-year
old girl can
easily operate
it.



Cut above shows stairway as
it appears folded in the upper
room.

Write us for
booklet and
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Has been installed in hospitals,
schools and other public build-
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This cut
shows stair-
way half way
down.
A light pull
on the
stringer
brings stair-
horse down,
ready for
use.

The
Bessler
Movable
Stairway Co.

Dept. 2 Akron, Ohio

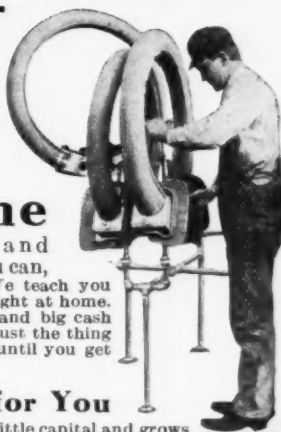
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You Can Make
\$250 Per
Month

With This

New Machine

Many are doing \$3,000 a year and better with this new machine. You can, too. **You need no experience.** We teach you FREE in one simple lesson. Start right at home. Everywhere there's plenty of money and big cash profits waiting for ambitious men. Just the thing to bring in the money between jobs, until you get the business started.



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A business all of your own. Requires little capital and grows fast into a real factory—a real manufacturer. **Open a Tire Repair Shop with Haywood Equipment.** Let the money roll in. Auto tires need mending constantly. There is your profit. Owners eager to give you their business. It means a saving of money to them, and big cash returns for you. If you own a shop now, put in one of these machines and double your profits.



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A valuable guide to power and wealth. It gives the complete details. How to start. How to succeed. Tells all about your opportunity. Shows how easy the work can be done. Shows the big profit in this new field.

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Write for it today.
Get your FREE copy.

A postcard will do. me your book as you promised to do. This of course does not obligate me in any way.

HAYWOOD TIRE AND
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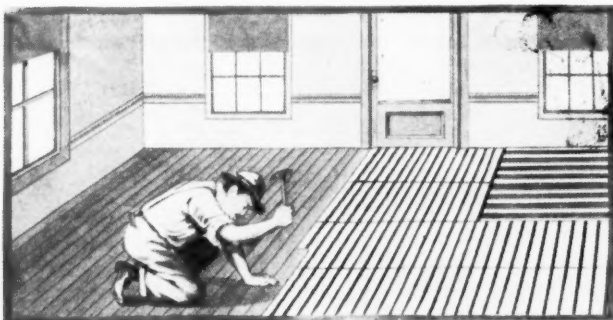
695 Capitol Ave.
INDIANAPOLIS, IND.

Name.....
Address.....

"Its Strength is in the Dovetail Joint"

A booklet has been recently issued by the Mastic Wall Board & Roofing Company, 678 Este Avenue, Cincinnati, Ohio, entitled "Built on the Wisdom of Ages." This booklet gives a most complete description of the construction and use of Bishopric stucco or plastic board and also Bishopric Sheathing.

Bishopric sheathing is made exactly like the stucco board except that the lath are not dovetailed, but are square the same as ordinary lath. The illustration shows the application of this sheathing under a floor for a sound deadener and to keep out dampness and cellar dust. When used in this way, the sheathing is generally placed with the lath



Bishopric Sheathing Used Under Flooring for Sound-Deadening and Damp-Proofing.

side up, as this will give dead air space between the laths and the flooring. When the sheathing is used over the rafters on the roof, it is generally placed so that the smooth side is up with the lath side against the rafters. It is placed with the lath side against the weatherboarding when it is used on

the walls of a building as a protection against dampness and cold.

Copies of the booklet can be obtained from the Mastic Wall Board & Roofing Co., 678 Este Avenue, Cincinnati, Ohio. This company also have a sample of stucco as applied to their stucco board which they will be glad to send to contractors that are especially interested in stucco work. The sample shows how the stucco is held firmly in place by means of the dovetailed, under-cut edges of the lath on the stucco board.



White Enamel Success on Arkansas Soft Pine Trim

As a base for white enamel, Arkansas soft pine is well entitled to most serious consideration. Any prejudice which may have existed against soft woods as interior trim has been largely due to the tendency of some of them to "over-absorb" the applied enamels and varnishes.

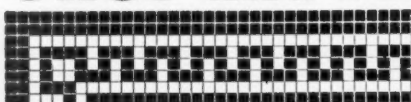
Another fault with some soft woods when used under white enamel lay in the staining of the enamel from underneath, due to pitch, "sugar," or rosin working out of the wood and thru the finished surface.

There has always been, however, one soft wood in which these faults are lacking—namely, Arkansas soft pine. No complications of the sort have ever been attributed to this splendid wood.

Arkansas soft pine will not over-absorb nor stain white enamel. The specific facts behind this statement are that the wood is practically free from rosin or sugar, and that it has a fine grain and tough fibre which creates a physical condition favorable to well-balanced absorption.

While the wood, being free from resinous oils, is soft, it is not of the cork-like softness of certain woods which

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For Bathrooms, Kitchens, Hall-rooms, etc.

We carry a most complete line of Ceramic Mosaic Floor Tile and Sanitary Glazed Wall Tile for every purpose. Our designs are unusually artistic and currently executed. The quality is *Lorenzen*—the best guarantee a builder can get. You can depend upon our prices being right.

Let us estimate on your next job or furnish you with an original design. At any rate, write for our Catalog No. 51 on Tiles and Mosaics. A postal will bring it and it is invaluable for your files.

Our large Catalog, "Vogue in Fire Places," the most comprehensive and complete catalog ever issued on fireplaces, should also be in your files. Write for it when building.

Chas. F. Lorenzen & Co.
103 N. Clark St. CHICAGO

Costs
but a
few
cents a
foot

KEEP YOUR MEN BUSY

THIS WINTER AT A BIG PROFIT TO YOU

THERE IS A
BIG PROFIT TO
YOU in SELLING
AND LAYING
"SANTILITE
COMPOSITION
FLOORING"
IN THE DULL
WINTER
MONTHS



As you know, "SANTILITE COMPOSITION FLOORING" is laid just like plaster $\frac{1}{4}$ of an inch thick on any sub-floor of wood or cement—sets in 6 to 8 hours into a smooth, jointless, absolutely sanitary surface, without cracks to collect dirt, germs and filth—absolutely no trouble to keep clean—never grows dusty regardless of wear—extremely easy to stand and walk upon—fire will not burn it—water will not soak it—of permanent, pleasing appearance—never requires painting and will last the life of the building.

"SANTILITE" is the ideal floor in the home for the kitchen, pantry, bath or any room where a sanitary, dustless floor is wanted. It is extensively used in the factory for offices, halls, lockers, toilets; and the store, restaurant, cafe, public, semi-public buildings, in areas subjected to heavy wear, where a pleasing appearance, durability and absolute sanitation are required.

There are many masons, building and cement contractors who are making big profits in selling and laying "SANTILITE." It enlarges that branch of your business where there is an ever increasing demand—every home with a wooden bath room or kitchen floor needs it—every public place that has lots of wear must have it. You will find that there is little competition in your own locality, and it is especially attractive for it keeps your men profitably busy during the closed or Winter Season.

Write for samples, illustrated instructions for laying "SANTILITE" and our proposition to make your winter's work profitable.

SANITARY COMPOSITION FLOOR CO.
131 Plum St. SYRACUSE, N. Y.



MAJESTIC Coal Chute

When planning a new home arrange for this modern building necessity in the foundation plans. It keeps the careless coal man from marring and scarring the sides of the house every time he delivers coal. Saves the lawn, walk, flowers and shrubs from being ruined by coal dust and stray lumps.

The Majestic when closed sets flush with the foundation. It has a glass door which serves as a window when chute is not in use for receiving coal and gives splendid light to the basement. The glass is protected when chute is in use by special iron plate. The Majestic is a cellar window as well as a coal chute.

Burglar Proof—Strong—Durable

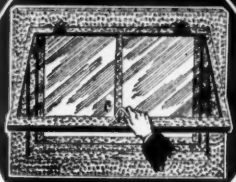
The Majestic locks from the inside securely and is absolutely burglar proof. It is extra durable, and will outlast the building. It has a heavy steel body, semi-steel door and boiler plate hopper. When open the hopper comes out automatically, catching all the coal, without waste or dirt.

Thousands of owners use them. Contractors endorse them and specify their use in all the new modern structures.

FREE BOOK gives full information regarding Majestic Coal Chutes, Underground and Kitchen Garbage Receivers, Majestic Milk Bottle and Package Receiver, Burglar Proof Basement Windows, Store Chutes and other Majestic Specialties.

THE MAJESTIC CO., 505 Erie St., Huntington, Ind

Put Chief Everlasting Windows In That Cellar



They will please the man you're building for better than any other type of window you could install. They're the modern cellar window—the solution of the window problem for the man who wants window satisfaction in service.

Built of steel and in complete units—casing and hinged window—Chief Cellar Windows leave no chance open for window troubles. They always open and close easily, leave no open

cracks and are absolutely unaffected by the weather.

Leak Proof—Rot Proof—Rust Proof

Chief Cellar Windows can't leak, rot or rust. They are enduring—good for a lifetime of service. They have every good quality of the old-fashioned, wooden window with the added advantage of steel construction.

These windows are easy to install, cost no more than wooden windows and are worth three times as much. They give real service—permanent, satisfaction-giving service. There's nothing to wear out about them and they can't shrink or swell and stick in the casing.

Satisfy your customers with Chief Windows. They'll all want them when they see them and there's profit for you in selling and installing these modern windows.

Write us today for full description and prices.

SHRAUGER &
JOHNSON
430 Walnut St.
Atlantic, Iowa.



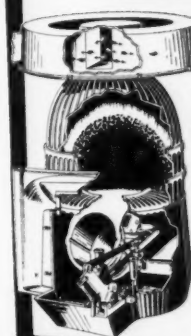
Cut Your Customer's Coal Bills

You Are Backed By

A \$1,000,000 Corporation, when you guarantee customers that you will reduce their coal bills $\frac{1}{2}$ to $\frac{3}{4}$ with Williamson New-Feed UNDERFEED Furnaces or Boilers. The Williamson Heater Company's guarantee backs you.

30,000 Boosters advertise you if you handle the Williamson New-Feed UNDERFEED. You are not offering something untried or unknown.

An Unbeatable Proposition is yours for the asking. We help you from inquiry to sale—and afterward. We furnish you with prospects' names, complete heating plans, advertising material, etc. But the best thing behind your guarantee of lower coal bills to customers is



The UNDERFEED gives fire free play. The hot, live coals are always on top of the fuel—not smothered by it. UNDERFEEDS are built on proper combustion principles—they are fed from below. Cheap coal as effective as highest grades. No smoke, soot, dust, or clinkers. Users are guaranteed $\frac{1}{2}$ to $\frac{3}{4}$ fuel saving. Wonderful seller! One user says: "No more top-feeds for me. Saved about \$30 last year." Another: "Heated ten rooms for \$20." Thousands of boosts like these. Take advantage of them now. Get our unequalled proposition. Write today.

The Williamson Heater Co.

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Cincinnati, Ohio

CANTON Coal-Chutes



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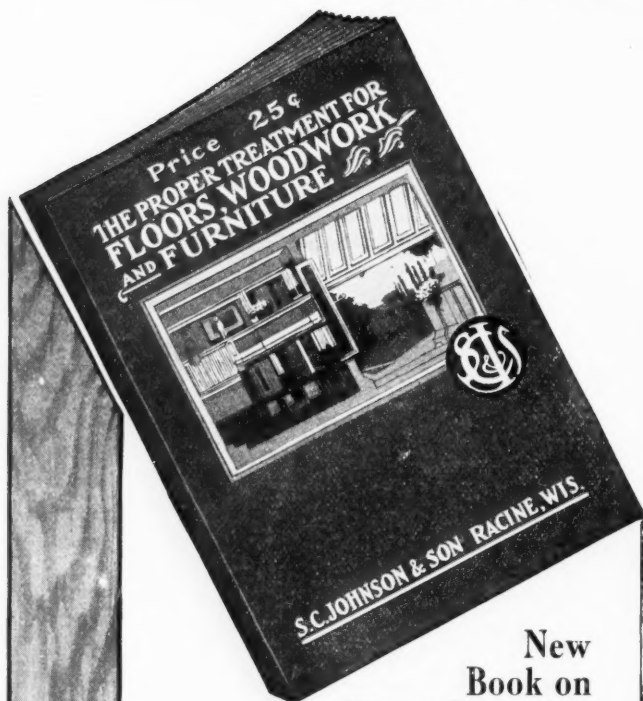
A Modern Convenience That Will Prove a Big Selling Asset in Your Bid

When you explain to your customers the disadvantages of battered foundations, marred walks, broken windows and dirtied lawns, they will be glad to spend a few dollars, and abolish this trouble for good.

Special Prices To Builders

We offer Canton Coal Chutes to Contractors and Builders at a good discount, making it profitable for you to specify and install them. Ask for Booklet "B-4."

Canton Foundry & Machine Co.
CANTON, OHIO



New Book on Wood Finishing

EVERY architect, contractor and builder is entitled to one of these new books free for the asking. It is a valuable handbook on interior finishing, beautifully illustrated in nine colors.

It tells how to finish inexpensive soft woods as beautifully as hardwoods and gives complete specifications for finishing woodwork and floors with

Johnson's Wood Dye

These dyes are not pore-filling varnish stains but coloring matter that penetrates deeply into the wood without raising the grain.

Johnson's Prepared Wax

is the most extraordinary polish for interior woodwork and floors. It gives a hard, dry, glass-like surface that does not collect dust.

If you are not familiar with Johnson's Wood Dyes and Prepared Wax we shall be glad to send you samples for experimental work or finished wood panels showing the various shades of Johnson's Wood Dye.

ACB-12

Please send me free and postpaid my copy of your new 25c Instruction Book, "The Proper Treatment for Floors, Woodwork and Furniture."

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Fill out this coupon and mail to

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"The Wood Finishing Authorities"

RACINE

WISCONSIN

for their part actually "drink up" the applied enamel. It is, in fact, a tough resilient wood which takes the filler and flat white coats to a nice degree of penetration. The pigment and oil are tenaciously embraced by the fibre of the wood in such a way that the application becomes actually "inlaid" with its base in the very core of the wood and its outer surface coinciding with the surface of the woodwork itself.

A fixed surface is thus established on which the final enamel coats are applied. As the wood ages the surface becomes harder so that a durable woodwork on which the enamel retains its lustre is the ultimate result.



Good Tools for Good Men

It is a fact that more time and money are wasted by the carpenter in sharpening poor tools and in not being able to use tools on account of breakage and dullness than would buy the best to be had. Then again the quality of his work itself is seriously affected, and his natural interest in the result of his work is lost.

There isn't a tool made that is too good for the man who makes his living by its use. That has been the policy of the L. & I. J. White Company since they were organized in 1837. They suggest that now, as the busiest season is over, our readers write to them and get a line on tools that will save them much work and time.

This company is located at 10 Columbia Street, Buffalo, N. Y. A study of their catalog, which will be sent on request, will give the up-to-date man many ideas on edge tools.



High-Grade Adze Made by L. & I. J. White.



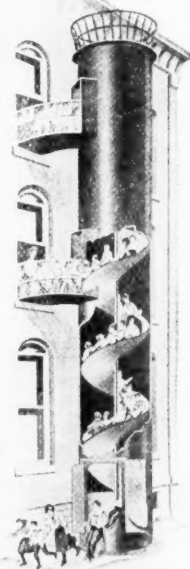
The Spiral Fire Escape

The best kind of a fire escape for getting people out of burning buildings is one that cannot be clogged in any way. The Kirker-Bender Spiral Fire Escape is constructed in this way. There is no possibility of anyone falling and stopping the exit of the others.

It consists of a spiral slide enclosed in a steel cylinder 6 feet in diameter. The cylinder rests on a foundation of brick or concrete and the slide delivers each person to the ground so that he lights on his feet in the same way as if he had just gotten up from a chair. The use of the spiral fire escape as installed on a school house is shown in the accompanying illustration.

The entrances to the escape are on runways from the various floors as shown. The entrance doors open inward and the exit door at the bottom opens outward. A very light pressure will open the doors.

Full descriptions of the spiral fire escape and the results obtained with it can be secured from the Dow Wire & Iron Works, Louisville, Ky., who are the makers of this apparatus.



Installation of Spiral Fire Escape at School House.

Let Your Specifications Read WRIGHT WIRE LATHING

Many of the country's foremost architects specify Wright Wire Lathing. It was used in the Grand Central Station and many other famous structures, as well as costly residences, because it resists the ravages of time and fire as no other lath can.

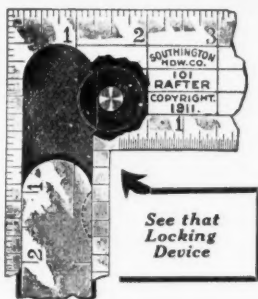
Wright Wire Lath is made in three finishes—Plain, Japanned and Galvanized. The illustration at the left shows Wright Galvanized Lath.

Our Catalogue W, describing Wright Wire Lathing in detail, is an intelligent guide for architects and builders. Send for a copy of this book today. Free on request.



WRIGHT WIRE COMPANY

WORCESTER, MASS.



Also Makers of the
New "HOLDFAST" Bevel
send 50 cents for sample

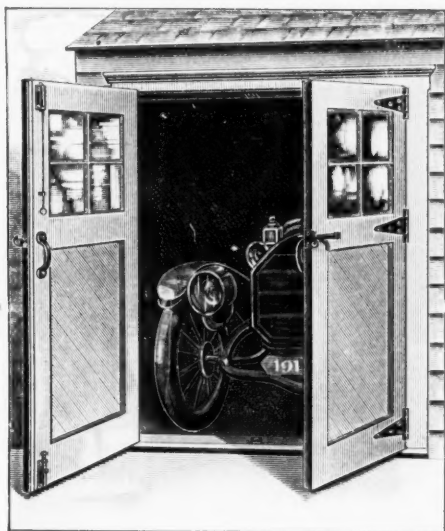
The "STANDARD" Take Down Square

The finest and only square on the market that can be SAFELY used.

For when it is LOCKED—see cut—it cannot slip, and is mechanically square.

Go to your dealer for it—TODAY—or we will forward one to you for \$2.50.

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SOUTHTON, CONNECTICUT



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Complete Hardware "Trim" in One Package, for Garage with Double Doors. Finished in Dead Black Japan—A Quality Set at Moderate Cost.

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It Contains 147 Pages of
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Every Builder who values Highest Quality and reasonable prices should have a copy of this book. It shows the entire BARBEE Line. A partial list including Skylight Guards, Weather Vanes, Window Guards and Grills, Plain and Ornamental Fencing and Gates, Sidewalk Grating, Stable Fixtures, Cast Iron Posts, Pipe Railings, Office Railings, Wickets, Partition Railings, etc. Radiator Guards, Step Railing, Steel Stairways, Fire-escapes and many other items. You'll find them all listed and illustrated in our large catalogue.

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The Large BARBEE FREE Book Coupon

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147 N. Dearborn St., Chicago Ill.

Gentlemen—I wish to see how I can save money on my Building Wire and Iron Work, so send me your large Free Catalogue.

Name

Address

The Upson Company Obtains Injunction

The Upson Company, makers of Upson Processed Board, have been recently granted an injunction against a dealer who was handling an inferior board made with a blue center in imitation of Upson Processed Board. The United

States Court granted a perpetual injunction against the sale of a board that was made with the blue center or similar to the blue center so that it would deceive the buyers who were looking for Upson Board.

This injunction is in the spirit of fair play. A manufacturer who has spent thousands of dollars and years of hard work in bringing before the public the distinctive feature of his product should not be cheated out of his reward because of cheaper imitations made to deceive customers. Outside of the loss in trade, the original manufacturer loses the confidence of many former patrons who purchase the inferior substitute under the impression that they are getting the original dependable goods. Customers can be sure of securing Upson Processed Board now when they ask for the "board with the blue center."

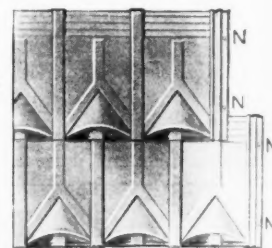
The Upson Company have recently added two new boards to their line. The names of these are Square Deal Board and Armor Board. These two are cheaper boards and together with Upson Processed Board make a most complete line for all purposes. The details of these various types and their uses can be obtained by writing the Upson Company, Lockport, N. Y.



Nowaday Roofings

The prime requisites in present-day roofing materials are: proof against fire; proof against weather and climatic conditions; proof against the everlasting renewal and repairing costs; a handsome appearance, a long life; easy of application; and a low first cost.

These prime requisites, so the manufacturers say, are met fully and squarely by the Walter's and Cooper's hand-dipped painted metal shingles made by the National Sheet Metal Roofing Company, of Jersey City, N. J.



Walter's and Cooper's Metal Shingles as Applied to a Roof.

They have had the true test that makes good on any product

—long service under adverse conditions, and they have not failed; for over thirty years they have been proving their value as a roofing material and the first shingles put in service are still in service, showing no signs of deterioration.

The Walter's and Cooper's painted metal shingle should have your full and exhaustive investigation; you should make it a point to be fully informed as to their value. There's no better time to start your inquiry than now while the matter is fresh in mind. Ask for catalog and roofing information.

Carpenters Wanted

Make money all winter—get the exclusive agency for Akron Lighting Systems, portable and street lamps and lanterns.

Write Today

AKRON Independent Lighting Systems

Supply gasoline under pressure through hollow wire to lamps all over the house, and to gasoline stove. Our system is absolutely safe.

Sheds a soft, steady, brilliant, white light of high candle power. Makes the home attractive and reading a greater pleasure. Better and cheaper than any other illumination.

Complete line of "Akron" portable and street lamps and lanterns. Latest types, latest improvements; safe and simple construction; 15 years of success.

Agents Wanted

In unoccupied territory. Handy demonstration outfit. Our proposition to live hustlers cannot be beat. Write for catalog and terms.

Akron Gas Lamp Co., 633 So. Main St., Akron, O.



Use Silo Sense

Consider all the factors that make the most efficient Silo and like hundreds of others you will choose

The KALAMAZOO GLAZED TILE SILO

as the Silo best for your customers' interests as well as your own. Kalamazoo Tile Silos are unsurpassed for durability and solidity of construction—Frost cannot penetrate the double wall. Glazed Tile is unequalled for appearance and enhances the looks of any farm.

Write to us for our latest book on Silos, Tile and Wood Stave, and "Early in Year Profit Sharing—Earn Cost First, then Pay" Sales Plan. Write Today—Dept. 507.

Kalamazoo Tank & Silo Co.
Kalamazoo, Mich.

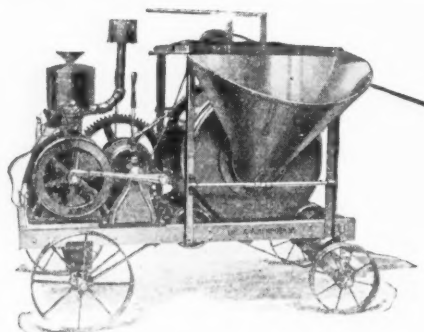


For the Small Jobs

For the little foundations and bridges and culverts, of which there are so many—for the small, yet important jobs where half the work, perhaps, is in getting ready to work; you will find the

"Knickerbocker"

A Great Saver of Time and Money



Stationary Batch Hopper and Hoisting Sheave

The Knickerbocker Co.
Jackson, Michigan

Make Them This Winter

Cold weather need not stop all outdoor concrete improvements. In the bitterest weather you can make many improvements indoors with sand, gravel or crushed stone and

ALPHA

The Guaranteed Portland Cement

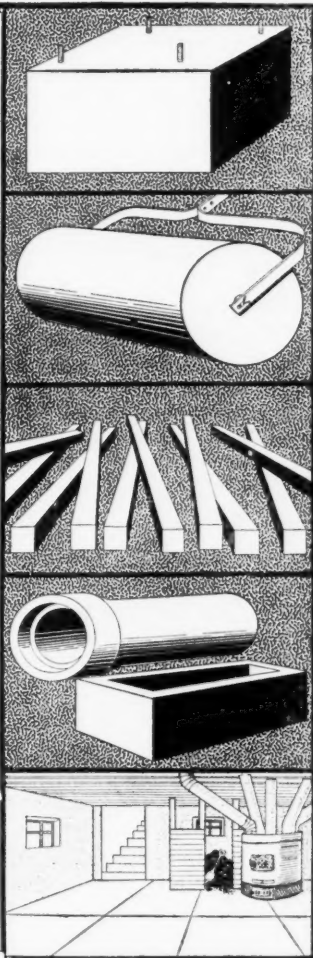
ALPHA represents 24 years of cement-making experience. Expert chemists test it every hour in the making. It is guaranteed to more than meet all recognized tests.

Floors, steps, posts, drain pipes, troughs, pots, boxes, slabs, etc., made with ALPHA are sanitary, economical and everlasting.

Ask for the ALPHA Book No. 10, which tells how to make these and many other concrete improvements such as tanks, cellars, silos, walks, barns, etc. Sent free.

ALPHA PORTLAND CEMENT CO.

General Offices: Easton, Pa.
Sales Offices: New York
Chicago Philadelphia
Boston Pittsburgh Buffalo
Baltimore Savannah



ARTISTIC HOMES

A book of 280 (8x11 inch) pages showing perspective views and floor plans of 250 artistic modern homes. A large variety of designs are given so as to meet the taste of the majority of home builders. There are artistic houses for people of moderate means and others for the more wealthy, but in every case the design is made with reference to comfort and economy.

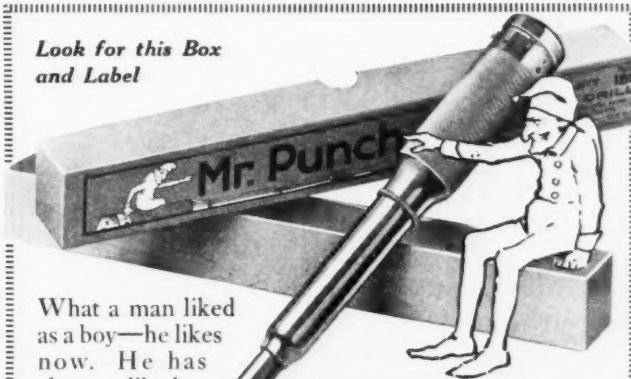
Every design shown has been made by the best architects in the world, who have made a study of home architecture and that alone.

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American Carpenter and Builder
1827 to 1833 Prairie Avenue, Chicago, Ill.

Look for this Box and Label



What a man liked as a boy—he likes now. He has always liked Good Tools. Give him what he likes.

A Dandy Gift

Mr. Punch is an Automatic Drill. You place the point of the drill and push. A spiral twist drives the drill. It will bite through an inch of solid oak in ten seconds.

The one great need in home tinkering is something to make a hole with. To drive a screw easily you must first make a hole. You want a hole through broom and brush handles. To repair a chair, to put on screen or storm-door, to put up a hammock, to put up curtain or bathroom fixtures, to make a bookcase—you always have to make a hole.

Mr. Punch is the handiest tool in the home tool-chest.

In the handle are eight tool-steel drill points, seen through numbered holes of same size as drill points. Drills are released through a hole in the revolving cap.

Mr. Punch is solidly made of brass and has a high nickel finish. He sells for \$1.50 at all good hardware stores.

Send for our Christmas booklet, "What to Give the Boy," describing Mr. Punch and fifteen other Good Tools which every home needs.

Goodell-Pratt 1500 Good Tools are known all over the world by Good Mechanics. They are not ordinary tools but combine exceptional quality with reasonable prices. Buy Mr. Punch for Christmas.

Goodell-Pratt Company, Fitchburg, Greenfield, Mass.

This Saw—
Cuts Nails
Metal
etc—



—as well as wood

SIMONDS

(pronounced—Si-monds)

No. 15

The best saw on the market for cutting old construction work.

Made of special crucible steel, taper ground for clearance, and with an adjustable apple handle. 22-inch saw sent any place in U. S. for \$2.00.

Don't ruin saws unsuited for such work, and don't borrow the other man's Simond's.

We will be glad to send you our book "The Carpenter's Guide" together with our list of prices.

SIMONDS MFG. CO.

FITCHBURG, : : : MASS.

Get Busy Now

Don't wait to plan how you'll make money this winter. Do it now. Get your plans all laid, then you won't be left in the lurch when cold weather comes and incomes fall off. If you want to make money at a *regular* business that you can handle, install

PULLMAN Metal Weather Strips

They are practical for old or new buildings. Any contractor or carpenter handling them can always find plenty of work. Home owners welcome anything that will make the house warmer and keep down heating costs. Pullman Metal Weather Strips will do it.

Pullman Metal Weather Strips are not expensive or hard to install. We furnish necessary tools and material.

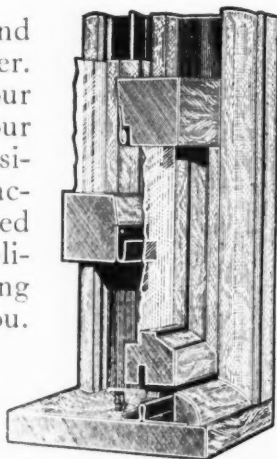
Get the Agency for Your Town

Write us today and find out about our offer. We want you as our representative in your town. Here's a business that will pay practically 50% if handled right. You don't obligate yourself by asking what we can offer you.

**Ask for Special
Literature**

**Pullman Metal Weather
Strip Co.**

York, - - - - Penna.



A Stairway that Saves Floor Space

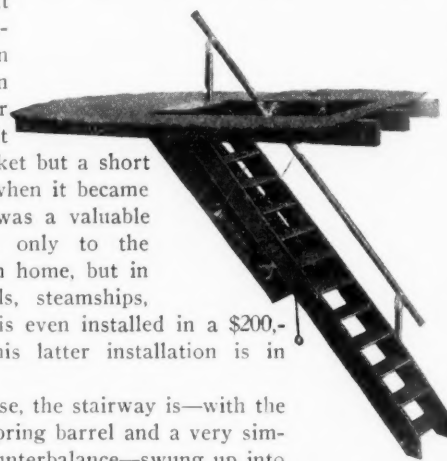
Every practical architect and builder is interested in ways and means for saving every possible square foot of floor space.

The Bessler Movable Stairway was designed to help this idea. At first it was intended only for use in homes between the second floor and the attic. It was on the market but a short time, however, when it became evident that it was a valuable acquisition, not only to the humble six-room home, but in hospitals, schools, steamships, yachts, and one is even installed in a \$200,000 mansion; this latter installation is in Akron, Ohio.

When not in use, the stairway is—with the assistance of a spring barrel and a very simple system of counterbalance—swung up into the ceiling with only a neat panel visible. When wanted, a light pull on a chain provided for this purpose, brings it down, and the stair-horse is easily rolled down the panel and on to the floor. A child can operate it.

The cost of the stairway is surprisingly low; and as for installation, one hour is sufficient in a new structure prepared for the stairway, and three to four hours is ample in an old building where the ceiling must first be prepared.

It is manufactured by the Bessler Movable Stairway Company, Akron, Ohio.



Shows Stairway in Position.

"Globe" Ventilators for Better Barns

The Globe Ventilator Company is sending out a folder, "Better Barns," which is descriptive of the "Globe" ventilator for use on barns, stables, creameries and silos. It numbers among its users such well-known concerns as Sheffield, Borden, Pacific Coast Condensed Milk Company, and numerous lesser farms. The "Globe" is simply and strongly constructed of the highest grade of galvanized iron by skilled workmen, is furnished all ready to be placed on the building, no frame work is necessary and the installation is a very simple matter.

The "Globe" ventilator will keep your barn sweet, clean, and dry, as it removes all odors, moisture and vitiated air—it will make every animal yield a better profit—cure hay quickly—and prevent spontaneous combustion.

In the "Globe" ventilator you have a recognized standard which has back of it over thirty years of proven efficiency.

Full information will be sent upon request by the Globe Ventilator Company, Troy, N. Y., also small model demonstrating operation of ventilator free of charge when desired.



It Adds to the Appearance of the Barn.

A piece of ALLMETAL Weatherstrip



There is nothing complicated about Allmetal WEATHERSTRIP

Old, shrunken, warped and out-of-square openings of every kind made dust and draft-proof.

EASIER TO INSTALL. This pattern is used more than all others combined.

EASIER TO SELL. This kind made metal weatherstripping a business.

ASK ANY ARCHITECT. Noiseless, easy-running, non-rattling sash; better than storm sash; absolutely permanent; sash instantly removable for repairs; coal saving pays the cost; solid comfort with a smaller heating plant.

ARE YOU THE MAN? We guarantee a money-making business for a live carpenter or builder who will follow our selling plan.

Answer Quick to Make Biggest Profits this Winter.

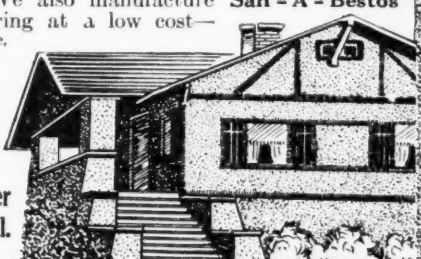
Allmetal Weatherstrip Co.
226 West Madison St., Chicago, Ill.

SAN-A-BESTOS STUCCO

DURABLE :: ARTISTIC

Possesses great tensile strength, and is not affected by climatic conditions. Is fire-proof, damp-proof, and crack-proof. Needs no paint. Presents a distinctive, pleasing appearance. We also manufacture **San - A - Bestos** composition flooring at a low cost—the equal of tile, terrazzo, or marble.

Write today for our information on **San - A - Bestos** Building products.



Franklyn R. Muller Co., - Waukegan, Ill.



1916 May Be a Record-Breaking Year for New Buildings. How About Yours?

If you are a Builder, anxious to make the most of your opportunity, will you use **KAWNEER STORE FRONTS**?

If you are a Builder, will you **recommend** and use **KAWNEER FRONTS**?

Either of you desires to erect buildings that will add to your reputation. **KAWNEER STORE FRONTS** will do it!

Every store building in which you are interested next year should have a **KAWNEER FRONT**. More than 50,000 of these Fronts already installed is the reason **WHY**!

Write for Information. Address Dept. S

KAWNEER MFG. CO.

155 Factory Street

NILES, MICH.

Makers of

Kawneer
STORE FRONTS

Branches in
Principal Cities

Straight Talks on Durametal Weatherstrips

**BUILDERS—CONTRACTORS
CARPENTERS—WEATHERSTRIP MEN**

are making handsome profits installing weatherstrips the **DURAMETAL WAY**.

¶ Our unique advertising campaign, handled for you locally secures orders for you direct from parties in your territory, interested in weatherstripping—No tedious wasteful soliciting necessary—Our simple instruction book covers everything on installation to make you expert.

¶ You buy direct from us at manufacturer's prices—make a profit on the strip, and good money on the installation besides. Durametal is simple to install and makes window slide easy. Our door bottom with all brass threshold is a beauty and mechanically perfect.

¶ Some good territories open for active men. You can be busy every day this fall and winter if you secure this agency. Write now for samples and our proposition

"How to Make Money Installing Weatherstrips".

Durametal Weatherstrip Co.

10 East Austin Ave.

CHICAGO

THE DIAMOND METAL WEATHER-STRIP

FOR DOORS AND WINDOWS

HAS EXCLUSIVE FEATURES OF ITS OWN —
LARGEST MOST COMPLETE LINE IN U.S.A.
REDUCES FUEL BILLS 20 TO 40%
KEEPS OUT WIND, DIRT, & STORM
SEND FOR OUR NEW BOOKLET

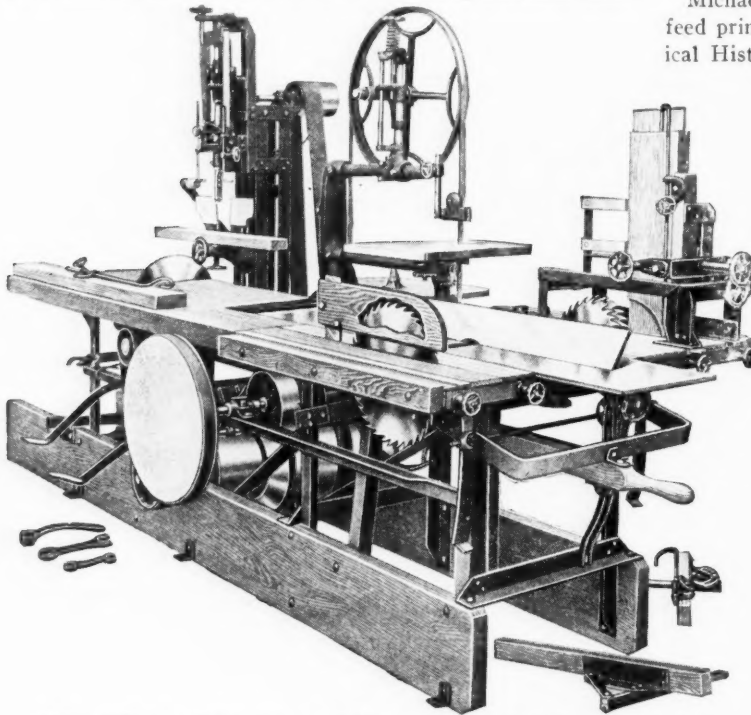
THE DIAMOND WAY OF PRACTICAL WEATHER-STRIPPING	POSITIVE PROOF FROM PARTICULAR PEOPLE IT WILL INTEREST YOU
---	---

OUR 365 AGENCIES IN U.S. AND CANADA ARE READY TO SERVE YOU AT A MOMENT'S NOTICE CAN BE PUT IN OLD OR NEW BUILDINGS WE WANT 1000 MORE AGENTS TO SELL AND INSTALL OUR WEATHER STRIP CONTRACTORS-CARPENTERS WRITE FOR OUR AGENCY PROPOSITION, YOU'LL LIKE IT. EXCLUSIVE MAKERS

DIAMOND METAL WEATHER STRIPS THE DIAMOND-METAL-Stamping COMPANY COLUMBUS, OHIO. U. S. A.

Parks Machine Has New Features

The contractors and builders are cleaning up their contracts for 1915 and will soon be planning on equipping their shops for the new year's business. The increasing demand for combination machines has proved their usefulness to the small contractor and the Parks Ball Bearing Machine Com-



Many Different Tools are Available on Park's Ball Bearing Machine Company's New Combination.

pany, Fergus Street and C. H. & D. Ry., Cincinnati, Ohio, have a new combination which meets the requirements of the carpenter who wants a complete equipment at a reasonable price. There are some features on the new machine that will not be found on any other combination machine, for instance, the upright hollow chisel mortiser, swing cut-off saw and double tenoner. The power required to operate this machine is about five horsepower and can be furnished with either gasoline engine or electric motor, which can be mounted on the base with the machine and the whole outfit taken out on the job, if desired. A great many other

improved machines are shown in the new catalog of the manufacturers which will be sent to any of our readers upon request.



The Story of the Underfeed

Michael Faraday, the great scientist, explained the "under-feed principle" in a few sentences during his lecture, "Chemical History of a Candle" (delivered before the Royal Institution):

"You know that a candle, if turned upside down, so as to allow the fuel to run upon the wick, will be put out. The reason is, that the flame has not had time to make the fuel hot enough to burn, as it does *above*, where it is carried in small quantities to the wick and has all the effect of the heat exercised upon it.

... "Look at the soots that fly off from the flame—see what an imperfect combustion it is, because it cannot get enough air.

... "You remember that when a candle burns badly it produces smoke; but if it is burning well there is no smoke. *And you know that the brightness of the candle is due to this smoke, which becomes ignited.* Here is an experiment to prove this: So long as the smoke remains in the flame of the candle and becomes ignited, it gives a beautiful light, and never appears to us in the form of black particles."

Following this correct principle, the Williamson Heater Company (formerly Peck-Williamson Company), Cincinnati, has evolved Williamson "New-Feed Underfeed" furnaces and boilers. That the "Underfeed" is practical and efficient beyond a doubt is shown by the fact that there



**An Ounce of Prevention
SNOW GUARDS**

prevent snow sliding off the roof, tearing away and damaging gutters and injuring passers-by. They are easily and quickly applied — low in cost. They are damage-suit Insurance. For old or new roofs. **FREE SAMPLES** together with various styles and prices on request.

CLASON METAL WORKS :: ::

"Clason" Guard for New Roofs
Providence, R. I.

**SLATE WE HAVE WHAT
YOU WANT**

*In Roofing Slate. Slate Blackboards
Structural and Plumbers' Slate*

SATISFACTION GUARANTEED IN QUALITY AND PRICE

ASK FOR DELIVERED PRICES

J. K. HOWER, Station, C., Danielsville, Pa.

R. J. KICHLINE, Sales Agent



Indestructible Roofing

Cover your buildings with Montross Metal Shingles and save yourself time, money, worry. Economical in price and easily laid. Our booklet, "The Best Roof Under The Sun" will make you a roofing expert. **Free on Request.**

AGENTS MAKE MONEY

On our profit sharing inducement to all reliable live wire dealers. Write for information, how our agents are growing rich handling Montross Metal Shingles. Big demand. This is your chance. Don't overlook it. Testimonial letters and affidavits cheerfully given.

MONTROSS METAL ROOFING CO., 102 Erie St., CAMDEN, N. J.

ROOFING SLATE SINCE 1869

Miners, Makers and Shippers of all Styles and Colors of Roofing Slate. Write for Prices.

RISING & NELSON SLATE CO.

Main Office: West Pawlet, Vt.

Branch Offices:

1140 Singer Bldg., New York City. 4 Post Office Sq., Boston, Mass.
Office and Yard, 2554 W. Harrison St., Chicago, Ill.

ROOF SLATES

STRUCTURAL SLATE BLACKBOARDS

E. J. JOHNSON

38 Park Row New York


Quarry Operator

BLACK, GREEN, PURPLE, RED

Booklet, Samples and Prices on Application

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

UNFADING
ROOFING SLATE
 and Slate Blackboards
Best to be had and made in
Slatington — Buy from us
Slatington-Bangor Slate Syndicate, Inc.
 Slatington, Penna.



ROOFING SLATE

Free Samples
 of the famous G F T Slate-Roofing will be sent on request to all Carpenters and Builders for comparison on Quality, Appearance and Prices.
 G F T Roofing-Slate stands alone in a combination of Durability and Beauty at a most reasonable cost. Write for Free Samples today.
Slatington Slate Co., Inc.
 Slatington, Pa.



THE ROCK OF AGES CLEFT FOR YOU

SHELDON'S SLATE

RED GREEN
 PURPLE BLACK

THE ROOF FOR AGES ALWAYS NEW

ECONOMICAL — ARTISTIC — FIREPROOF
 Outlast the building. First cost, only cost. The only roof you can afford to consider for a permanent investment. Artificial substitutes bring endless expense for upkeep. Post a postal and get posted.
F. C. SHELDON SLATE CO., Granville, N. Y.

The Walter's and Cooper's Zinc Coated Metal Shingle

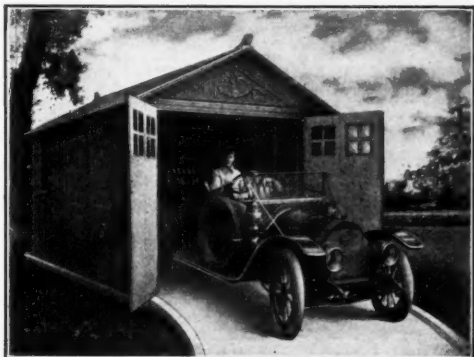
is coated or plated after stamping, so that every last possible spot where deterioration could start has a rich, heavy, zinc coating. The result is: Walter's and Cooper's Interlocking Metal Shingles are practically indestructible under all climatic and weather conditions. Roofs covered thirty years ago are as good now as when first put on and have never caused a cent's worth of expense in renewals or repairs in all that time. Roofing contractors make a very handsome profit handling these shingles. Ask for particulars.

National Sheet Metal Roofing Co.
 339-345 Grand St., Jersey City, N. J.



YOU'RE MISSING A BET

MR. CARPENTER
 IF YOU ARE PASSING UP THE
METAL SHELTER GAME



IT'S THE BEST BET YET

The METAL SHELTER Agency gets you more business, more customers, more work for your men, more money for you, better and quicker results, and—get this—

A REAL BUSINESS OF YOUR OWN

Don't wait. Get the agency for Metal Shelter Garages, Cottages, Bungalows, Stores, etc., before the other fellow beats you to it. You can sell 'em, and it's a cinch to set 'em up—a building a day. THINK! Investigation costs you nothing. Write right now.

Metal Shelter Co., Inc.

Whitehall Bldg. — New York City

"Business comes to him who knows his Business"

It is no mere coincidence that the most prosperous roofers and contractors in this country are also the most enthusiastic advocates of **Genuine Bangor Slate**—not only of the quality, but also of our business methods.



Let us show you how to increase your profit through our **Trade Help Department**. Send the attached coupon today.

Genuine Bangor Slate Co.
 Quarries: Bangor, Pa. EASTON, PA.

GENUINE BANGOR SLATE CO., Easton, Pa. December, 1915
 Please send information.

Signed.....
 Address.....
 City.....State.....



"Viceroy" Bath, Plate No. V-12-A "Belmore" Lavatory, Plate No. 145-FA
(Patent applied for)

The KOHLER trade-mark appears on every piece of KOHLER enameled plumbing ware. It is incorporated in faint blue in the enamel, at the points indicated by the arrows.

Easy-cleansing enameled plumbing ware that is permanently trade-marked

The permanent trade-mark incorporated in the enamel of every KOHLER product is our guarantee of quality.

It protects both the builder and his customer. The KOHLER trade-mark is a symbol of excellence in enameled bathtubs, lavatories and sinks, and prevents substitution of inferior ware.

KOHLER enameled plumbing ware is notable because of these special features

The permanent trade-mark incorporated in the enamel

One-piece construction Easily installed
One quality—the highest
Easy-cleansing enamel, always pure white
Modern, hygienic designs

The "Viceroy" built-in bathtub, specially low priced due to manufacturing economies, adds distinction to the modest home, and is suitable for the most luxurious house or apartment.

It can be installed either with tiling or with cement floor and adamant plaster. The light construction makes extra heavy supporting beams unnecessary. Write for our descriptive "Viceroy" circular.

MAKERS
OF
Trade-marked
Enameled
Bathtubs,
Lavatories
and Sinks.

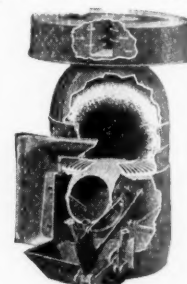
"It's in the Kohler Enamel"

KOHLER CO.
Founded 1873
Kohler, Wis., U.S.A.

BRANCHES
Boston
New York
Pittsburgh
Chicago
San Francisco
London

are over 35,000 enthusiastic users everywhere, who have been guaranteed by their dealers that they would cut coal bills one-half to two-thirds with the "Underfeed." The Williamson Company, a million dollar corporation, backs the dealer in this consumer guarantee, so it is not strange that Williamsons are so popular.

Users say that not only the guaranteed coal-saving feature of the "Underfeed" appeals to them, but that the "Underfeed" way means no clinkers, smoke, soot, or dust. In operation, the Williamson is said to be "almost effortless"; a small boy can fill it with a few down strokes of a handy lever that can be reached without stooping. And when the fuel is "pumped up" from below, it is ready to be burned from above, so that the live hot coals are always on top, turning all smoke and gas into clean, usable heat. Cheap grades of coal are just as effective as the expensive kinds, and this is the secret of the "Underfeed's" real economy. For complete details and exceptional quotations, the reader would do well to address the Williamson Heater Company, 447 Fifth Avenue, Cincinnati, Ohio.



The Newfeed Underfeed.

Fire, Water and Load Tests on Pressed Steel Construction

A booklet has been recently issued by the Berger Manufacturing Company, Canton, Ohio, describing three tests that were made on their metal lumber construction. This bulletin contains much information of general nature and shows clearly the trying ordeal that this method of construction was put thru successfully to test it.

One of the tests that is described is unofficial and the other two are official. The tests were made so that the material would be subjected to a treatment such as it would get during the worst possible fire. The average fire would not cause nearly so high temperatures as were secured; and the fact that this material came thru this test of both fire and water, and then was subjected to a heavy load and still did not fail was a proof it is almost perfectly fireproof.

Copies of this bulletin can be obtained from the Berger Manufacturing Company, either at Canton or at their nearest branch office as given in their advertisement in another part of this issue. Ask them for Bulletin L. A. B.

The Eureka Batch Mixer

For many years the Eureka Machine Company were engaged in manufacturing high grade continuous mixers. It is only within the last year that they have come out with a batch mixer. This is called the 5-6 Eureka batch mixer.

One of the features of this machine is the construction of the rollers. These are keyed to the shaft and turn in babbitted bearings on the main frame. Because of the double cone shape of the mixer, large rollers can be used which the makers say cuts down the friction to a large degree.

The charging is taken care of by a power loader, altho a hopper can also be had. The batch hopper is separated from the mixer by a slide so that a full batch can be placed in the charging hopper while the drum is mixing. The power loader is also arranged to handle one complete charge for the mixer.

The Eureka Machine Company, 103 Handy Street, Lansing, Mich., will be pleased to send a circular to our readers describing the mixer in detail and will furnish all the information required.

Winter Profit!

ARE YOU GETTING YOUR SHARE?

A Contractor says: "I made \$500.00 last year out of this business."

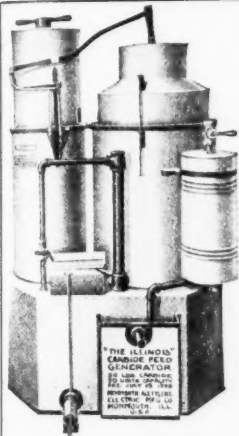
You can do as well.
Sell DAVIS light plants for country homes.
Used all over the world for fifteen years.
We help you sell.

NO INVESTMENT ASKED

The proposition does not ask you to risk your money on our goods.
It is our business to help you sell and we do.
Ask for full description of plan.

Davis Acetylene Company

90 Prospect St., Elkhart, Ind.



Lighting Systems

that are Safe, Simple, Reliable and Efficient

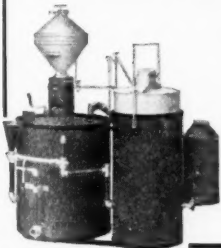
Illinois and Monmouth Pit Generators

represent the pinnacle of Perfection in Lighting Systems. Their convenience and fine lighting facilities are appreciated by every rural resident. They are very easy to sell and yield you a handsome profit. We give Carpenters and Builders special Prices and Discounts and help them close sales by sending all prospects, handsome booklets and literature showing the desirability of our Generators.

Simply send us the names of persons who might be interested; we'll work together and you act as our direct agent installing and selling them. In the meantime learn more about Illinois and Monmouth Generators by reading over our Catalogue and Proposition—Write

Monmouth Acetylene-Electric Manufacturing Co.
Dept. AB. MONMOUTH, ILL.

Lighting and Cooking for Country Homes SUNLIGHT GAS MACHINES



Are the oldest reliable acetylene generators in the world. No clock work. No complicated parts. Perfectly automatic. Guaranteed.

All leading contractors recommend SUNLIGHT machines. It pays to do so. Why not make from \$1,000 to \$5,000 a year in deals you can close if you try? Others do, why not you? We will help you. Write Dept. K.

THE SUNLIGHT GAS MACHINE CO.
52 Vanderbilt Ave. New York City
Opposite Grand Central Depot

Globe-Fencing

Makes attractive appearing yards and offers attractive profits to the builder who recommends it.

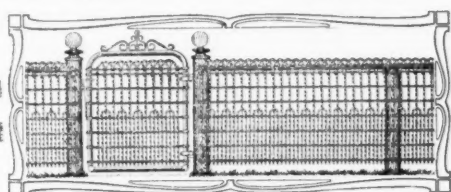
We have constructions suitable for backyard, front and division fencing.

Easy to erect and easy to sell. Every Globe fence you erect is a recommendation in itself for other orders.

Write for our catalog and discounts to builders.

GLOBE FENCE COMPANY

20 22nd Street North Chicago, Ill.



You simply Push- the Button-

No Engineer — No Large Battery

The **Bruston Automatic Electric Light** plant, for country homes, churches, hotels, small towns, etc., is absolutely automatic.

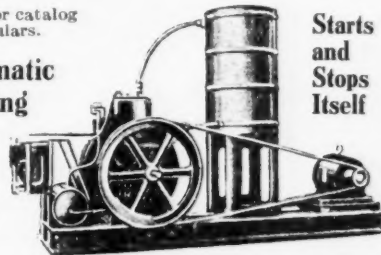
Generates current from 50% to 75% less than rates usually charged by lighting corporations. Over a thousand in successful operation.

We have a special proposition for Carpenters and Builders in small towns and country districts to install and sell the Bruston Plants at a good profit.

Write to us now for catalog and further particulars.

Bruston Automatic Electric Lighting & Power Company, Inc.

126 Liberty Street
NEW YORK CITY



Starts
and
Stops
Itself

FIREPLACE MATERIAL



Every
Contractor
building Fire-
places should
know the ad-
vantages of this
Dome Damper.

The rod extends out under the brick or tile so there is no interference after the Damper is first set. Wide flanges allow giving sides of Fireplace any angle desired. Cover will not slip out of position. Castings are extra strong. Made with or without angle for carrying brick.

Catalogue No. 1550 shows them in detail

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Send the undersigned information regarding
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The Stern Floor Scraper

The Stern Floor Scraper was designed by a practical carpenter, who, after trying all the different scrapers on the market, decided that he could improve on them all, and at the same time put up a machine that could be sold at a price within the reach of every contractor's bank account. The Stern Scraper is the final solution to his problem.



The Convenient Size and Arrangement of the Stern Floor Scraper.

Notice the following points on this scraper:
1st. Turn the small wheel at the top of the handle; this loosens a brake on the quadrant that allows the adjustment of the handle to any height desired. Another turn and the handle is absolutely rigid in the position needed.

2nd. Place an ordinary screw driver in the slot in the center of the quadrant, and by a twist of the wrist you can secure an adjustment of the blade holder to the thousandth part of an inch.

3rd. The blade can be instantly removed or replaced by merely turning the hand wheel on the blade holder. No bolts or nuts to contend with; just a twist of the wrist and the blade is adjusted exactly as is needed.

4th. This scraper does not require any special shape or size of blade; any size up to 3½ by 7 inches will fit the

holder. These can be secured from any hardware store.

5th. The hand holds on each end of the scraper make it easy for two men to move it from place to place.

6th. Place the handle in an upright position; you can then scrape the floors of narrow rooms and halls that can not be worked in the usual way.

7th. Two weights of twenty pounds each can be removed and replaced quickly, according to the class of floor you desire to finish. The complete scraper weighs 125 pounds; crated, about 150 pounds.

With a little practice a workman can finish a floor in one-third to one-fifth the time that it takes by hand, and at the same time do as high grade work.

Address the Stern Mfg. Co., Lancaster, Pa., for full particulars.



Biggest September Business

To celebrate a record-breaking September business, about thirty members of the Detroit Steel Products Company, Detroit, Mich., were the guests of General Manager J. G. Rumney at a banquet given Tuesday, October 19th, at the Detroit Athletic Club.

The September output of the company, including both Fenestra solid steel windows and also Detroit self-lubricated springs was the biggest in the history of the company. And from present indications the remaining months of 1915 are going to be no exception to the rule. The September record was a combination of a series of record-breaking months throughout the year.

At the banquet, speeches were made by Mr. Walter S. Russel, president of the Russel Wheel & Foundry Company, of Detroit, and by Mr. R. S. Drummond, vice-president of the Detroit Steel Products Company.

Skylights-



A Man, a Hammer and a Screwdriver

are all that is needed to put up the

WILLIS SKYLIGHTS

And combined with simplicity is durability. Only the best sheet metal is used; and every Skylight is guaranteed not to sag, buckle or spread. It takes a few hours to erect a Willis, and it lasts for years.

Our Catalogue includes everything you need in sheet metal—ventilators, crestings, store fronts, roofings, etc. Write for it.

Willis Manufacturing Company
GALESBURG, ILL.

Good Money for Builders in JAMES Ventilators

The better looking your barn jobs are, the better advertisements they are for you in the localities where you build them, and the more money you make.

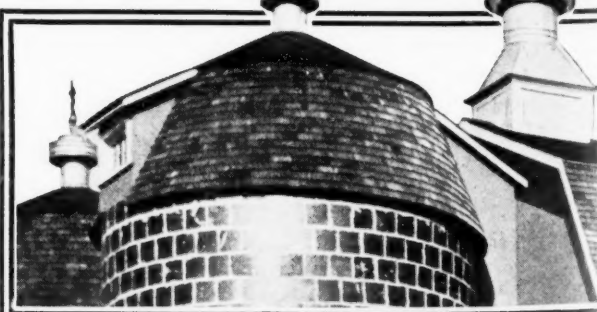
JAMES Ventilators mean better looking barns, pleased owners. They give you a strong selling point in favor of your service. The JAMES system of barn ventilation is vitally important. It creates sanitary conditions in the barn—healthy cows, increased milk yield, bigger profits.

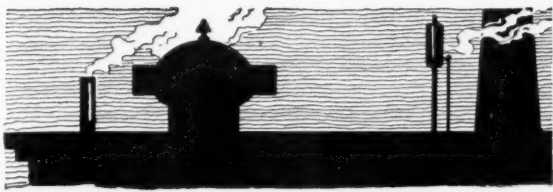
JAMES Ventilators have the right principle: they pull foul air out of the barn and force fresh air in. They are handsome and add much to the attractive appearance of the building.

Learn about JAMES Ventilators—also about JAMES Blue-Print and Barn Building Service—and be sure to write for the free book, "Building the Dairy Barn." Give names and addresses of people in your vicinity who expect to build or remodel barns, when, and for how many cows, and book will be sent at once.

JAMES MFG. CO.
D. M. 75 Cane St.
Fort Atkinson, Wis.

Write for Free Copy
"Building the
Dairy Barn"





The VENTILATOR that VENTILATES with the least cost and the greatest efficiency.

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—the silent, trouble and storm-proof Ventilator that has proven practical upon the largest manufacturing plants, dairies, and buildings of every character.

If you are interested in any problem of proper building ventilation, consult us. We offer our co-operation—an experience gained in 35 years of service.

Give us your building problem and we will suggest your requirements for proper ventilation. Write now for catalog and prices for your future use.

Address Department F,

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TROY, N.Y.

Manufacturers' representative wanted in the cities of Buffalo, Cincinnati, New York, Pittsburgh, Indianapolis, Toledo, Newark, Jersey City, Detroit, Minneapolis, St. Louis and Rochester. The proposition is a superior gas range. Representative to secure quantity orders from builders and contractors. Actual experience as a salesman in this line not necessary, but acquaintance with building and contracting trade an advantage. Commission basis, insuring good income to able man. Address Range, Box 827, American Carpenter and Builder, Chicago.



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Special prices to Contractors and Builders where we are not represented.

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Our Catalog Describes Our Complete Line—Write for it Today

Galesburg Sheet Metal Works
GALESBURG, ILLINOIS

"Brilliant" Kerosene or Gasoline Lamps

It should be of great interest to our readers to know more about the "Brilliant" kerosene incandescent gas system and stand lamps that generate their own gas from common kerosene oil. They burn as steady and bright as sunlight and almost as cheap. One gallon of kerosene will last 25 to 40 hours, giving 300 to 600 candlepower light.

The manufacturers have spent months and months testing and experimenting to produce lamps that would successfully make gas from common kerosene. They announce that they have the combination that produces the results and can guarantee it. The lamps will not only burn kerosene, but will burn gasoline as well; or both mixed; or kerosene one day and gasoline the next.

There is nothing complicated about them. A new system can be installed by anyone, or these lamps can be connected with any hollow-wire system to take the place of old lamps that are not satisfactory, thus utilizing their old systems and making them better than new at a very small expense.

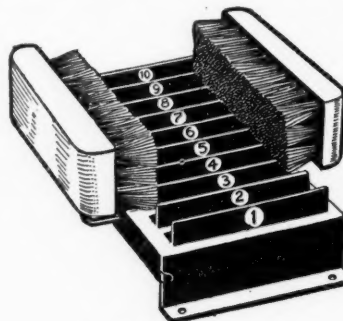
Address the Brilliant Gas Lamp Company, 1009 B. S. Wabash Avenue, Chicago.



Money Making Opportunity

This is an age of great inventions, but no invention of modern times has more attractive features for agents than Grab's automatic shoe cleaner. The manufacturers claim that this labor-saving invention is taking the country by storm; that over one million have been sold; and that millions are waiting to buy. Its sale offers big opportunity to agents. Those who are "in the know" say fortunate indeed are those who have or will get their county under exclusive contract, as it is an opportunity for the agent to make his entire or spare time productive of big

earnings. It supplies an enormous demand—solves a great home problem in which nine out of ten families are vitally interested. Practically every home offers a prospective customer for the sale of one or more.



Grab's Shoe Cleaner.

Dirty shoes with their load of dirt, mud or snow have been the bane of every woman's life. "Wipe your shoes before entering this house," has been everybody's wish, but nobody's privilege. Door mats and crude steel scrapers fail in this mission because they are not scientific. They clean the sole, but not the shoe; the bottom, but not the sides.

Grab's automatic shoe cleaner deals with this, an old problem, in an entirely new and better way. This ingenious device, weighing less than four pounds, actually cleans the entire shoe in one simple operation. It cleans the sole—the sides—the front—the heel. Mud, dirt, dust, snow is removed in a jiffy.

In the home guarded by one or more Grab's scrapers there is less dirt to contend with, less work to do, less drudgery to suffer, less shoes to buy.

The manufacturers want representatives in all parts of the country to assist them in supplying the wide demand already created. By all means investigate this proposition today by addressing the Security Manufacturing Company, Department 208, Toledo, Ohio, and receive their free catalog, with reports of wonderful money-making results achieved by others.

Up-to-Date Ideas for Up-to-Date Builders

GENERAL SUMMARY OF CONTENTS

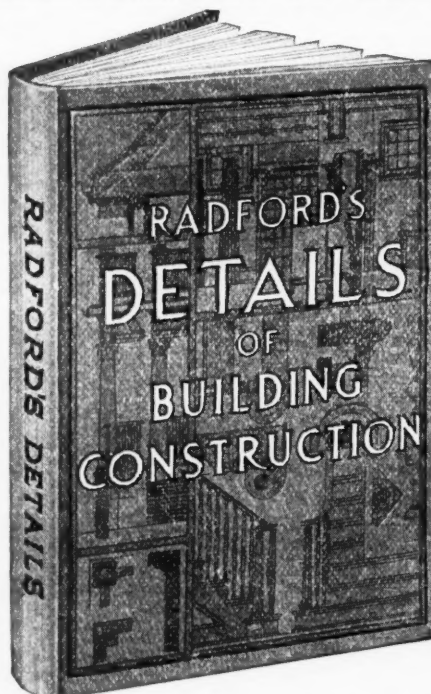
Radford's **DETAILS OF BUILDING CONSTRUCTION** is a complete manual of Building Practice, as applied to carpentry, construction and the use of millwork. It is a remarkable collection of full-page plates, accurately drawn and reproduced to exact scale, showing clearly every detail of modern building construction and finish. These plates make plain the framing and construction of residences of every type—frame houses, brick houses, brick-veneer houses, "stucco" or cement-plaster houses, cement block houses, etc.

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